Oil, Paint and Drug Reporter.

VOL. XXXIV. No. 26. NEW YORK, WEDNESDAY, DECEMBER 26, 1888. PRICE PER YEAR, If paid in advance, $4.00. $6.00.

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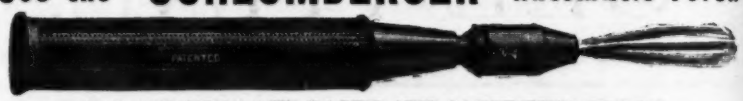

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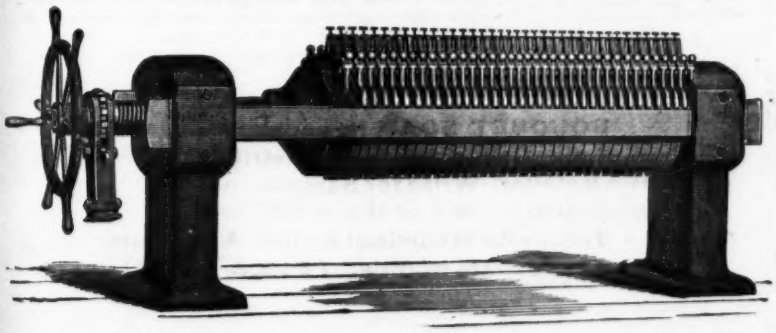

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OIL, PAINT & DRUG PUBLISHING CO., Proprietors.

FRANKLIN H. TINKER, Treas. & Manager. W. B. TEMPLETON, Secretary.

PUBLISHED EVERY WEDNESDAY at 72 William street, New York.

SUBSCRIPTION RATE.

One year, including postage.....$6.00.
If paid in advance.....$4.00.
To all foreign countries, including postage.....$6.00.

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WEDNESDAY, DEC. 26, 1888.

LEADING TOPICS THIS WEEK.

The Standard Test of Opium.
Cuttlefish Bone Market.
Advancing Prices for Saffron.
Petroleum Futures.
Concerning the Alcohol Pool.
Duty on Degras and Fish Oil.
The Trade in Annatto.
Decision on Alcohol and Bitters.
Changing Cotton Oil Rules.
A Cottonseed Canard from the South.
The Sickness of Mr. C. T. Raynolds.
Meeting of Glass Manufacturers.
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Samples at the Appraiser's Stores.
Report on Methylated Spirits.
Composition of Oleomargarine and Its Ingredients.
Manufacture of Borax in Germany.

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WEEKLY REVIEW.

The activity in the money market has continued during the past week, with an upward tendency. The rate for call loans has ranged higher and closes at 3@5%. Time loans rule at 5% for 30@120 days. The supply of commercial paper is quite limited and the demand is fair. We quote 60 to 90 day's indorsed bills receivable at 5%, first class four months' commission house names at 5¼@6, and good single names—jobbers—having four to six months to run at 5@5½. Following are the rates of exchange on New York: Savannah, buying ⅛ discount selling par, Charleston, buying 1-16@⅛ discount, selling par. New Orleans commercial, $1 50 per $1,000 discount; bank, par. St. Louis, 25@50c per $1,000 discount. Chicago, 75c per $1,000 discount. Sterling exchange remains dull and steady,

Sterling, 60 days, nominal	$4 85	@4 85½
sight, nominal	4 89½	@
60 days, actual	4 84¼	@4 84½
sight, actual	4 88½	@4 89
Cable transfers	4 89¼	@4 89¾
Commercial, 60 days	4 83¼	@4 83½
Paris, 60 days	5 21⅞	@5 21¼
sight	5 18¾	@5 18⅞
com., 60 days	5 23¾	@5 23⅛
com., sight	5 20	@5 19⅜
Antwerp, 60 days	5 25	@5 24⅜
Swiss, 60 days	5 22½	@5 21⅞
sight	5 19⅜	@5 18¾
Reich marks (4) 60 days		95¼@95¼
(4) sight		95¾@95⅞
(4) nom., 60 days		94⅜@95⅜
(4) com., sight		95⅝@95⅛
Guilders, 60 days	40	3-16@40¼
sight	40	9-16@40 7-16
com., 60 days	40	1-16@40⅛
com., sight	40	¼@40 5-16
Copenhagen, Stockholm and Christiana, Krona, 60 days		26¾@26⅞
sight	27	@27⅛

THE STANDARD TEST ON OPIUM.

NEW YORK, Dec. 22, 1888.

Editor OIL, PAINT AND DRUG REPORTER:

Your admission in the last issue of the REPORTER, that the law which prevents the importation of opium assaying less than nine per cent. of morphia is "ridiculous" and unnecessary, will hardly be supported by the trade. If the Government won't protect buyers against imposition, who will? If we had no standard test every importer of opium would be required to give a guarantee of the test, and to do so would necessitate an assay of every package. Each analysis costs $5, and the sampling, together with the additional expenses of handling, increases the cost of each assay to $11@12. Is it not just as necessary for the Government to have supervision over opium as it has over other articles which are not dutiable, such as asafœtida, aloes, ipecac, gum guiac, jalap, etc.? Sometimes these goods are found adulterated and their entry refused. G. C.

Our correspondent evidently read our editorial hastily and without due consideration, as he has failed to interpret the remarks on opium. That our opinion that the law which prevents the importation of opium assaying less than nine per cent. of morphia is unnecessary "will hardly be supported by the trade," will depend, perhaps, upon who is meant by "the trade." We trust our correspondent does not wish to insinuate that our importers are so ignorant or "fresh" that Uncle Sam must protect them against the wily foreigner who sends us the opium? In the absence of a legal standard an assay would, of course, be necessary to determine the quality of drug, which would certainly entail an expense, but not one of five dollars for each assay. Opium is valuable only for the alkaloids it contains, the principal one of which, of course, is morphia, and as this is contained in the crude drug in varying proportions it is absolutely necessary that an assay be made before the drug is finally converted or enters into a medicament, be that medicament tincture, pill, extract or clyster. Now it is manifestly cheaper for the assay to be made by the importer or the shipper in the primary markets, and then the guarantee of percentage of morphia would fix its quality and determine its market value. It is not a question of adulteration. All goods found to be adulterated or sophisticated should be excluded. In that direction we would go even farther than does the supposed protection at present afforded by the customs laws. The present law excludes all opium having a lower alkaloidal strength than nine per cent. How is it determined by the Custom house officials whether the opium contains nine per cent. of morphia? It may not appear just fair to answer one conundrum by propounding another, but our correspondent struggled so bravely with the question of assay that we could not resist the temptation. As it is clearly evident it would cost the importers no more to have the custom house examiners determine whether a certain importation has a total of nine or five per cent. of morphia, the objection on account of expense does not hold good. Opium found adulterated should either be refused entry or its exact quality designated. Of the other opiums excluded by our customs laws, the product of Bengal averages from three to five per cent. of morphia, that of Malwa four to nine per cent., Persian four to eight per cent., and Egyptian four to seven per cent. All India opium is free from the leaves, seeds and other refuse so notoriously abundant in Smyrna opium. These grades of lower alkaloidal strength can always be purchased at a relatively lower price, and yet our manufacturers of morphia are refused the privilege to purchase these grades in competition with the foreign manufacturers.

FUTURES IN PETROLEUM.

Before the next issue of the REPORTER reaches its readers trading in pipe line certificates for future delivery will have been begun on the Consolidated Stock and Petroleum Exchange in this city. Heretofore all dealings in certificates have been made for prompt delivery, designated as regular delivery, the oil sold to-day being delivered through the clearing house to-morrow. Formerly the business transacted was of large proportions, the brokers being kept busy buying and selling for speculating capitalists and others who found a certain fascination in this mode of trading, so different from the principal transactions on the Produce and Cotton Exchanges, where the dealings are mostly in futures. It has frequently been suggestad that petroleum should be sold for future delivery, but the old plan appeared satisfactory and many believed that owing to the difference in the commodities and the trade regulations governing them that trading in futures as is done in wheat, corn, cotton, etc., was not practicable with petroleum. Others, again, regarded dealings in futures as approaching commercial gambling, and were opposed to the inauguration of trading in futures, believing that some of the reflections made against trading as conducted on many of the commercial exchanges of the country did not apply to the Petroleum Exchange, and these few rather prided themselves on what they considered the superior commercial morality of the manner of trading as conducted on their exchange. The number of these sticklers was small, however, and it was not difficult to convince them that it was just as legitimate and honorable to buy or sell for next month's delivery as for to-morrow's. Those who saw difficulties in the way which they believed would be peculiar to trading in petroleum certificates, have become convinced that dealings in futures under the rules and regulations adopted are not only practicable but advantageous, and among these are now some of the most enthusiastic advocates of the new departure. The innovation was decided upon after careful consideration. During the past two years speculative trading has decreased to an extent that the Board of Directors of the exchange have become convinced there must be some cogent reason therefor, and the adoption of the new mode of trading, which is to be supplementary to the present mode, was decided upon, being desired by a large proportion of the members, and was urgently demanded by patrons of the members who desired to deal in petroleum as they deal in wheat and other staples. It is believed that this will mark a new era of prosperity in the petroleum department of the Consolidated Exchange.

A SHARP ADVANCE IN AMERICAN SAFFRON.

A jump from eighteen to twenty-five cents per pound in the price of American saffron within the last few days has again brought that article into prominence. For some reason this drug appears to be a favorite with dealers of speculative tendencies and the record of prices for several years past shows some remarkable fluctuations—remarkable because of the suddenness and extent of the jumps they have taken under the pressure of speculative manipulation. Last year at about this time there was an equally sudden and large advance in the price of American saffron, the culmination of a prolonged and skillful effort to get control of the market. Prior to that the price of this drug for many successive seasons had been so low that it hardly paid the Mexicans, who gather and prepare it for market, to harvest the crop and last year they sent, in place of the usual average supply of several hundred bales, scarcely seventy. As the result of the meagre crop, aided by shrewd manipulation of the supply left over from previous seasons, a large advance occurred in the market rates here, and although it was not held through the season, it was expected that the prospects of greater remuneration than they had received for many years would stimulate the Mexicans to gather a larger crop this year. That, however, according to current information does not appear to have been the case either because of adverse natural conditions or a lack of confidence on the part of the gatherers in the future of the market.

At any rate the supply of American saffron for the coming year is now said to be all in, and is found to be far below the average. The position is strengthened if current reports are reliable by the fact that one dealer has obtained control of the entire product and has withdrawn from the market until the scattering supplies left from last year are absorbed. These supplies being comparatively insignificant, and a rather urgent demand having been developed as the result of the reported strong position of the commodity, the price as already stated has advanced to twenty-five cents, and will probably go still higher.

LOW PRICES FOR CUTTLEFISH BONE.

That supply and demand do not always regulate prices in an open market is demonstrated by the position occupied by cuttlefish bone for more than a year past. Here is an article for which there exists at almost all times a good demand, of which, for the past year at least, the supply has barely been adequate to trade requirements. Yet it has been selling at an average price of twenty cents while the average cost to import has been twenty-two cents per pound. In the face of restricted supplies and high prices in the primary market, cuttle-bone has been kept down here to a figure which, on the year's business, must represent quite a heavy loss to the dealers, because one of the number it is said has assumed an attitude which is obnoxious to the others, and they propose that he shall reap no advantage from it even though they have to suffer a considerable loss themselves.

About two years ago, when prices had depreciated to about eleven and a half cents through a glut of stocks and sharp competition between the holders, a reaction set in, the supply becoming concentrated and prices advancing sharply. The advance, however, was not long maintained, as an unexpected surplus from the previous season turned up and gave outsiders an opportunity to enter into competition with the principal holde here, which quickly unsettled the market. This condition prevailed for some time until the outside supplies were absorbed, or were thought to be absorbed, when the market again began to advance. Again outside lots appeared, and the absorbing process was renewed and followed by a reaction in prices, but up to the present time there has been no permanent improvement, for almost as soon as the offerings from outside sources were taken care of by the chief holders and the market recovered from the temporary weakness caused by their presence, further lots, always from the same source, were put up on the market at less than the current prices. These outside lots have latterly been of small proportions, generally but a few straps, yet they are always of sufficient consequence to unsettle the market.

About a week ago the dealer who is credited with making these disturbing offers to sell at comparatively low prices again appeared in the market

with a supply after he was supposed to have been bought out by a competitor who was desirous of sustaining the market. The result was a break in prices, and now it is intimated that the market will be kept down until these outside lots cease to make their appearance. In that case it looks as though consumers will be the only people benefited, as the foreign market is strong, with no prospect of being lower until the next catch at least.

CONCERNING THE ALCOHOL POOL.

The partial destruction of a Chicago distillery by a dynamite bomb has brought the Distillers' and Cattle Feeders' Trust into unenviable prominence in certain quarters, the owner of the damaged plant having been quoted as saying that he attributed the outrage to the vindictiveness of the Trust in retaliation for his refusal to be absorbed by that body. The charge is certainly a very serious one if it has any foundation in fact, but there appears to be little direct evidence to support it. Apart from the natural inference that a reputable organization, with less dangerous and much more effective means at its disposal with which to check undesirable competition, would not resort to deeds of violence to effect its purpose, the trust is so well equipped and has such close control of the trade that it can afford to wait until a comparatively small competitor shall, by force of circumstances, be obliged to abandon the field or seek an alliance with it. Such statements as that imputing anarchistic methods to a business organization, and which gain currency through the sensational columns of the daily press, which rarely stops to fully investigate a silly rumor before giving it publicity, do inestimable damage to legitimate trade. By unsettling the confidence of consumers in the stability of a market, they work as much damage to the latter's interests as to those of the manufacturer whose methods and acts are given such interpretation. There is no doubt that the Distillers' Trust, in its anxiety to completely control the entire trade in alcohol, would resort to the most stringent measures in its treatment of competitors, to attain that end, but with the ordinarily recognized commercial weapons at its command, supplemented by an almost perfect organization and practically unlimited capital, the necessity for adopting positively unlawful and ferocious means to dispose of a comparatively small competitor can hardly exist. We cannot explain nor have we heard any other theory advanced to account for the dynamite explosion in the Chicago distillery, but in a city where the lower working classes are as much imbued with anarchistic ideas for the betterment of their condition, as they appear to be in Chicago, possibly the outraged distiller would not have to seek far for the cause of his wrecked works, or the person who did the deed, if investigation were made in the right direction.

In this connection it may not be out of place to refer to other statements regarding the attitude of the Distillers' Trust, toward competitors, which have been given currency by newspaper reports. Among these is the rumor that a campaign of extermination has been decided upon against the distillers who have refused to come into the combination, and that it will be inaugurated on January 1st by a decided reduction in the price of whisky. Although this appears to be only a revival of a report to a like effect, which has been diligently circulated at more or less frequent intervals since the first notice of the organization of the Trust was issued, it may have some foundation in fact. The concluding statement, however, is misleading to the general public and, probably, equally so to many of the dealers in the trust's products. It is safe to say that whatever action is taken by that body on January 1st, or on any other date, will have no effect upon the price of whisky, or what is ordinarily understood to be comprehended by that term. The trust manufactures high wines and alcohol, and its action with reference to prices relates to these commodities only. The whisky manufacturers are controlled by a separate organization, which has no connection, even remotely, with the distillers' pool. What the effect of a decline in the price of high wines or alcohol may be upon the price of whisky, cannot therefore be estimated from the attitude of the Distillers' and Cattle Feeders' Trust.

If the action indicated in regard to a large reduction in the price of high wines and alcohol, is taken by the distillers' pool, it will be deprecated by every large dealer in those commodities. The outside distillers, of which there are but three or four, would no doubt in time be brought to accept the terms of the trust by that sort of argument, but in the meantime the stability which the market has displayed during the past year, would be lost, and the confidence of buyers so much shaken that the effort to restore remunerative prices, after the object was accomplished, would only complicate matters. When a combination of manufacturers, for the purpose of silencing competition, depress prices to the point where loss must inevitably result from every sale of their goods, they violate business principles, and the result is so far-reaching in effect that such a course once entered upon the end can never be foreseen. In the case of alcohol such innumerable interests are affected by a large rise or fall in price, that the apparently strong control over the market which has been exercised by the Distillers' Trust the past year, has been of great benefit to all branches of the trade. By the action that organization is credited with having determined to take, much of this benefit if not all must be lost, particularly as the natural tendency would be for the diistillers' pool to advance their prices eventually to a point that would enable them to make up the losses sustained while the process of forcing out or absorbing competitors was in operation.

DEGRAS AND JAPANESE OIL.

As there is some show of tariff legislation, parties identified with the menhaden oil industry are somewhat exercised over the fact that degras and fish oils are included in the free list of the Senate bill. The paragraph relating to this subject reads as follows:

> Grease and oils, such as are commonly used n soap-making or in wire drawing, or for stuffing or dressing leather, and as are fit only for such uses, not specially enumerated or provided for in this act.

The present rate of duty on both articles is twenty-five per cent. ad valorem, but the desire is for a specific duty, and a committee has gone to Washington to ask for a tariff of one and a half cents per pound on degras and ten cents per gallon on fish oils. It is questionable if a verbal hearing will be granted, as the Senate tariff committee has decided to receive only communications upon the subject.

This is merely another form of handicapping the menhaden industry, as all other efforts to restrict fishing by special legislation in the New Jersey Assembly and in Congress have been failures. If proper investigation is made it will no doubt be found that the same influence is at work to prevent fishing on the New Jersey coast by making it unprofitable. By inviting Japanese oil and encouraging increased importations of degras, it is hoped to strangle the menhaden industry for good, but past experiences would indicate that the men who have their capital invested in the enterprise are not so easily discouraged. They have been made aggressive by the vindictiveness of their opponents, and they will not surrender their rights without a severe struggle.

The most direct benefit from an abolition of duty would be derived by the leather manufacturers, who could then buy their raw materials from England, France and Japan on a cheaper basis; and it will no doubt be argued that the menhaden industry is so small as not to be deserving of protection. The shrinkage in menhaden oil values has been $313,000 and in scrap $60,000 during the past four years, owing to foreign and domestic competition, but this fact does not mean a gradual extermination of the trade. It has received a new lease of life this season by the absence of disturbing elements, and if allowed to pursue its natural course unhampered by legislation, much better results will be achieved from an investment of three million dollars. At present New York, of all the States engaged in the menhaden trade, has the largest amount of capital invested. Connecticut and Rhode Island stand second and third in the list. Connecticut probably employs more fishermen than any of the States named.

The recovered wool grease known as degras, has a steady sale in the United States and is principally imported into Boston. The English grade had accumulated to a large extent on the other side until an outlet was found for it here, and now that it has a permanent footing prices have almost doubled, English being quoted at a fraction under three cents per pound and French at twelve cents. We believe that wool grease is being recovered in certain adjoining States, but the quantity is not sufficient to compete with the foreign, and from all accounts the domestic has yet to appear in this market. Japanese fish oil was formerly imported to a moderately large extent during the reign of high prices for menhaden, but it disappeared about two years ago for the reason as stated by a representative of the Japanese Government, that they intended to refine the oil and use it at home, but the chief cause is to be found in the fact, no doubt, that values did not encourage shipments, and if the duty is removed it would be offering a premium of that amount on future business. The menhaden fishermen will not feel inclined to commence operations next season until the uncertainty has been removed, but if no action is taken by the present Congress they will doubtless arrive at an understanding with the tariff committees of the next Congress.

If prohibited from following their legitimate avocation by unfavorable tariff revision, some of the menhaden steamers may be employed in competition with the food fisheries. For instance, a dealer on opening a kit of mackerel the other day, had his curiosity excited. The fish looked like mackerel and yet they did not. On making further investigation he found that what purported to be mackerel, and what were so branded, were really menhaden. They were split the same as mackerel, and to the ordinary buyer would pass as such, notwithstanding the difference in the appearance of the skin and the linings of the stomachs of the two species. This deception is due to the scarcity of mackerel.

ANNATTO.

Since the hornet's nest was raised by the Internal Revenue Department concerning the use of vegetable oils and coloring matters in butter, there has been more or less talk about annatto seed, the bulk of which is used in butter making. There seems to be a misapprehension concerning the decision of the Internal Revenue commissioner, and so far as we can learn he has not ruled that the coloring of butter with annatto renders it liable to tax as oleomargarine, but that a mixture of one per cent of a vegetable oil with butter was liable to tax, the same as a mixture containing a greater quantity of vegetable oil, and that is as far as the Internal Revenue Department has gone. Coloring matter has been used so long that almost every consumer of butter understands that it is a part of the article that he is using for butter, and he would be the very first person to object to a discontinuance of its use.

The commissioner of Agriculture has been asked for his opinion, and of course protects the dairy interests in his definition of the law. He thinks the farmers are justified in using it and cannot understand in what way they could be benefitted by being compelled to sell their white butter to the oleomargarine manufacturer, as suggested by the Commissioner of Internal Revenue, to be mixed with animal fats, colored and then placed upon the market by the manufacturer as oleomargarine. In his view, the use of coloring matter dissolved in vegetable oil is not an adulteration of butter, but is really a part of the product and not liable to the oleomargarine tax.

Notwithstanding the opinions so freely expressed during the week, we understand that the Philadelphia collector has sent out inspectors to confiscate all artificially colored butter. He is rather premature and hasty in his action, as subsequent events will prove. The New York collector is disposed to survey the field and take notes for the future. Manufacturers of butter color have been considerably exercised over the discussion and they held communication with every person who is supposed to be familiar with the workings of the department, resulting in their fears being quieted by the assurance that the artifical coloring was legitimate and would not be opposed by the Government.

The trade in annatto seed is increasing, while the demand for paste is rapidly on the decline, which is due more to the comparatively high price than anything else. The seed is imported from Jamaica and the West Indies during February, March, April and May, and the total receipts aggregate about 3,000 barrels and bags of 150 pounds each during a season. The price of seed is four to five cents per pound, while pickled paste, which is used for dying purposes and comes in cases of 400 pounds each, commands five cents, and prepared annatto, in baskets of fifty pounds each, is quoted at twelve to twenty-two cents. The coloring material is removed from the seed, and the latter is then used by fertilizer manufacturers. As annatto is pronounced harmless by all authorities, considerable is used in other food products and confections, and there is every indication that its consumption will continue to increase.

DECISION ON ALCOHOL AND BITTERS.

An important decision to the manufacturing trade has been rendered by the Iowa Supreme Court, to the effect that any liquid containing alcohol no matter how much it may be diluted is intoxicating. One portion of the article in dispute contained by weight 2.42 per cent. of alcohol and 3.02 per cent. by volume, and the other contained 2,58 per cent. by weight and 3.23 per cent. by volume. It was alleged that this preparation would not intoxicate the average drinker, but would have that effect on those not accustomed to drinking. The Supreme Court throws out the evidence, and makes a broad-gauge decision as to what composes intoxicating liquor in the eye of the law, in the following language:

The lower court must have found, under the foregoing evidence, that the liquors were not intoxicating. This finding has the force and effect of a verdict of a jury, and cannot be disturbed if more than one conclusion can fairly be drawn from the evidence. Conceding the competence of the evidence as to the intoxicating character of the liquor, if the question to be determined rested alone on such evidence, we are disposed to think, under the settled rule prevailing in this court, it would be doubtful whether we could disturb such findings. We do not feel called on to determine such question. The statute provides that the words intoxicating liquors as used therein shall be construed to mean alcohol, wines, beer, spirituous, vinous and malt liquors, and all intoxicating liquors whatever. Alcohol is, therefore, an intoxicating liquor, regardless of the fact that the quantity drank at any one time would not have that effect. It is immaterial in a statutory sense what effect alcohol may have on the human system; it is intoxicating liquor. However much it may be diluted, it must remain an intoxicant when used as a beverage, and no matter how it may be diluted or disguised it so remains, simply because the statute so declares. The liquor in question contained alcohol and, therefore, it as a matter of law was intoxicating."

If the literal meaning of the decision is to be followed, no article containing alcohol can be sold in Iowa, while the present law is in force.

CHANGING COTTON OIL RULES.

A notice has been posted on the floor of the Produce Exchange, to the effect that a meeting of the oil trade will be held on Thursday, December 27, at 2:15 P. M., to consider the question of amending the rules relating to cottonseed oil. This action has been contemplated for a year, but the committee did not decide definitely until last week to invite opinions from the trade, as recent cases coming before it for adjudication seemed to necessitate a change. The rules now governing sales are as follows:

Crude cottonseed oil to pass as prime must be made from decorticated seed, and must be sweet in flavor and odor and free from water and settlings.

Summer yellow cottonseed oil to pass as prime must be brilliant, free from water and settlings, sweet in flavor and odor, and of straw color, not reddish.

Winter yellow cottonseed oil must be brilliant, free from water and settlings, sweet in flavor and odor, of straw color, not reddish, and must stand limpid at a temperature of 32° F. for five hours.

Summer white cottonseed oil must be straw white to white in color and free from water and settlings.

Winter white cottonseed oil must be straw white to white in color, free from water and settlings, and must stand limpid at a temperature of 32° F. for five hours.

Settlements of contracts for cottonseed oil shall be made on the basis of forty-four gallons per barrel for crude, and of forty-six gallons per barrel for refined.

Settlement of contracts for cottonseed oil shall be made at the mean between the closing prices bid and asked at the call on the day of settlement, it being understood, however, that a settlement cannot be substituted for a performance of contract, except by mutual consent.

Deliveries of cottonseed oil shall be made by weight at the rate of seven and one-half (7½) pounds net to the gallon, and in lots of not less than one hundred barrels at one time, and of not less than fifty barrels at one place.

Members of the committee decline to state their objections to the rules until the meeting, as their suggestions may not agree with others and it is not desired to have any prepared plan for action until the whole subject has been ventilated. The members of the committee no doubt desire more time for examination of samples before a decision is rendered. At the present time the trade is anxious for the result on the same day that each case is considered, and it is found next to impossible to subject the oil to a proper test and ascertain the proportion of water and settlings in such a short time. The test authorized by the Produce Exchange is not satisfactory, but the objectionable features have not been made known, the committee preferring to wait until the oil trade is assembled before offering a substitute. Disputes have been comparatively few this season, but last year the committee had considerable work to perform, and it was of such a character that the present rules were found inadequate. In order to give no excuse for grievances after decisions are rendered, a change is deemed necessary. The meeting ought to be well attended as it is a matter which concerns every one dealing in cotton oil on change.

A COTTONSEED CANARD.

It has been stated that a bill passed the lower branch of the South Carolina Legislature, levying a tax of twenty-five cents a ton on all cotton seed brought into the state from other states. This is no doubt another evidence of the enterprise of daily journalism, as careful inquiry from different sources, even from a resident of the state named, who is identified with the cotton oil industry, fails to confirm any part of the report. The subject has not been discussed in the state or by the press, so far as can be learned from our correspondents or exchanges published in that section, and it is to be taken for granted that the whole matter is a mythical bugbear to influence the seed market. It is a severe reflection on the legislature of South Carolina to credit it with the display of such a non-progressive spirit. We do not believe that any attempt has been made to tax cottonseed or that the question has been seriously considered. The suggestion would provoke antagonism of the liveliest sort, followed by sure defeat. The illegality of any measure of that character is so obvious that the legislature will not enact laws which are certain to be decided of no effect by the final court that passes upon them.

TRADE ITEMS.

It is said that a company is in operation in Brooklyn manufacturing oil from corn for edible purposes.

A Pennsylvania member of Congress is looking up the advisability of the adoption of a parcels post in this country.

The steamer Hornet, plying in southern waters, was sunk last week. Among its cargo were 152 bags of cottonseed belonging to the Southern Oil Company.

The Boston Paper Trade Association held its monthly meeting at Young's hotel on Wednesday, and the after-dinner speakers were principally newspaper men.

Mr. John W. Masury, the varnish manufacturer, was quietly married last week to a Brooklyn lady, and departed for his winter residence in Thomaston, Ga.

Washington Beck's glass factory in Pittsburg, together with a quantity of valuable machinery and glass moulds, were badly damaged by fire. Loss, $10,000; insured.

In the U. S. Senate last week Mr. Cullom introduced a bill to abolish the special taxes on distilled spirits at places where goods are delivered by the carrier to the vendee. It was referred.

Senator Faulkner introduced a bill last week to establish a pure food division in the Department of Agriculture, etc. It is identically the same bill as that reported in the House last session by Mr. Laird.

The Senate Committee on Finance has about decided to give no more oral hearings, in view of the debate on the Tariff bill but to let all those who wish to be heard file their statements with the committee.

Mr. Phillip Armour, the Chicago pork packer says that if Congress does not do something to remove the evils of the Interstate Commerce law the greatest financial crisis ever witnessed in this country will take place.

Reports have been in circulation for several weeks relative to anticipated changes on January 1st, in certain paint houses of this city. The REPORTER has been requested to state that they are without foundation.

In conversing with a member of the oil trade a Boston *Bulletin* reporter was told that the trade had made money this year, as they generally bought in anticipation of an advance, which most of them realized.

A correspondent desires to know the address of the manufacturer of "Perry's Patent Mineral Filler." Any information upon this subject will be thankfully received by the REPORTER, on behalf of the correspondent.

The closing year and the holidays bring a pause to general trade, but stock-taking always has its unconscious influence on price. Two years ago this influence tended upward, a year ago it was stationary, this year it is said to be downward.

The members of the Produce Exchange will have to be satisfied with Christmas and New Year's as holidays. The vote taken to make December 24 and 31 extra holidays was 601 in favor and 444 against, or 95 less than a two-thirds vote as required.

A man in Malton, Nev, tipped a couple of barrels of whiskey into a natural spring which flowed on his premises and invited all the ranchmen for miles around to come and see it. The next day he sold the spring for $10,000 in gold dust and fled the country.

A window glass works at Bellaire, O., has just put in a fuel oil plant for which all the convenience and brilliancy of natural gas is claimed, with the addition that it is safer and cheaper. The plant is just completed and will be given a practical test this week.

At Scranton, Pa., Dec. 21, the Scranton match factory, which employed forty persons, was burned at 6 A. M. Loss on stock, $4,000; on building and machinery, $8,000. Insurance, $4,000. The factory was operated by the liquidating trustees of the Scranton Match Co.

Advices have been received from Hayti to the effect that the dispute over the seizure of the American steamer Haytian Republic has been settled. The steamer has been delivered to the American men-of-war, and the latter have honored the Haytian flag with a salute of twenty-one guns.

Private information, of a reliable character, which comes from Washington, is to the effect that some interesting developments in the matter of regulating the internal revenue tax, with particular reference to alcohol may be expected to result from the action of Congress, in a few days.

The recent hearing before the Inter-State Commerce Commission relative to complaints against Southern railroads for not conforming to the provisions of the law is believed to have been productive of good results, and to have stimulated a better feeling on the part of the railroad men toward living up to the law.

The American flint glass schedule for the coming year will remain the same as that in force during the past year. The old scale expired on December 15, at which date any change desired by either workers or manufacturers is required to be presented. Neither asked any modifications, and the old schedule continues in force.

"To our already formidable list of poisons," says an English journal, "may be added as a source of occasional danger, the fragrant nutmeg. It is not likely that adults will ever die of eating nutmegs. At least one fatal case has occurred where a boy of eight, having eaten two nutmegs, fell into a comatose condition and died within twelve hours. The symptoms were similar to those of opium poisoning."

The Salt Trust is talked about as though it were a new thing. The fact is that there was a salt combination twenty years ago, which demonstrated the fact that new salt works were brought into existence to share the big profits, with the result of a general smash about 1874 or 1875. The reports indicate that some of the salt manufacturers now have long enough memories to decline to repeat their old experience.—*Pittsburg Dispatch.*

The Hong Hong steamer which arrived in San Francisco, December 15th, brought one of the largest consignments of opium ever imported there. She had no less than seven and one-half tons of the finest prepared opium, put up in ten-pound boxes. As the duty is $10 a pound, this amounts to $150,000, while the entire value of the importation is $250,000. The opium is worth more than its weight in silver, and it is consigned to three large importers.

The report that the flint and lime glass manufacturers were endeavoring to form a trust, appears to be without foundation in fact. The "mysterious conferences" alluded to in dispatches from Pittsburg, resolve themselves into the regular monthly business meetings of the manufacturers' association, a secret conference regarding a recent failure in that branch of trade, and a meeting of the manufacturers' wage committee to consider what action should be taken in regard to the workers' scale for the next fire.

At last we are treated to a novelty in the way of almanac-making. Dr. J. C. Ayer & Co., the well-known manufacturing chemists of Lowell, Mass., send us their Almanac for 1889, in the shape of a good-sized book, embracing editions in English, calculated for the various sections of the United States, the Dominion of Canada, India, South Africa and Australia; also, editions in nine other languages. The volume contains, also, specimen pages of pamphlets issued by the company in eleven languages not represented by the almanacs.

Professors Remington and Saudtle of the Philadelphia College of Pharmacy accompanied about eighty of the students of that institution on a visit to this city on Monday. The day was divided between the laboratory of Mr. Squibb in Brooklyn, and the factory of Seabury & Johnson at Orange, both of which were thoroughly inspected and a demonstration and explanation of the processes employed made, much to the edification and instruction of the visitors. At the Seabury & Johnson works a luncheon was served by the proprietor Mr. G. J. Seabury.

The detection of extensive smuggling in opium and other commodities across the Northwestern frontier would seem to require the employment of some more effective means of inspection and regulation than those now in force. The opium smuggling alone has defrauded the government of vast sums of revenue and the dishonest traffic has reached an extent which calls for prompt and energetic efforts for its suppression. Thus far the Treasury authorities have paid but very inadequate attention to it.—*Phila. Press.* The censured officials have done everything possible to stop the smuggling, as recent arrests and convictions would indicate.

The latest concerning the gigantic smoking opium smuggling conspiracy of which so much has been heard of late, is that it is backed by a strong syndicate representing large capital, which some estimates place at $5,000,000. The money is said to be largely controled by a Victoria, B. C., man, and is used to smuggle the prepared opium from the latter city, where it is manufactured, into the United States. A Toronto Chinaman, a rich San Francisco merchant, a San Francisco character known as "Opium Pete," and a man formerly employed as an interpreter by the United States Government, are said to compose the syndicate in connection with the Victoria man already mentioned.

Internal Revenue Collector Gerker of Philadelphia has ordered the deputies to visit all the market houses and take samples of butter exposed for sale, with a view to enforcing the recent decision of Commissioner Miller that all butter in any manner adulterated or colored is liable to an internal revenue tax of 2 cents per pound. This is regarded as a retaliatory measure procured by the dealers in oleomargarine. Heretofore the butter makers have resorted to various schemes in coloring their products. Some of them boiled carrots and mixed them in, and others used chemical compounds which would not unite with the natural product, leaving broad reddish-looking streaks.

Mr. C. F. Burger, who is credited with making vigorous efforts to organize an American Salt Trust, laughs at the idea of a salt trust being impossible. A salt plant of small size, he says, costs $30,000, while oil wells cost a tenth of that sum. Oil is controlled. Why can't the manufacture of salt be also? Fuel is one great item. If the coal oil producers alone were interested in a salt union, what would a small producer do? He does not say that this is the case, but simply claims that it shows one way in which the small producers might look at the question before refusing to join the union. He was not pleased with the publication of the trust scheme so early, but he finds it already working in his interests from numerous letters already received. He says that the trust will use a new process for making salt at a reduced cost.

PETROLEUM NOTES.

Columbus, Ind., is raising funds for boring five more gas wells.

Natural gas companies are organizing at Hamilton and Ovid, Ind.

Drilling began on the gas well, at Bloomdale, O., on Wednesday of last week.

There are forty natural gas wells in Decatur County, Ind., already completed, and but one, sunk near Clarksburg, is a total failure.

A McKeesport (Pa.) syndicate has offered $32,000 for a farm in Versailles Township, same State, its intention being to use it for prospecting purposes.

A number of Canonsburg, Pa., gentlemen have leased 3,000 acres of gas territory in Mt. Pleasant Township, same state, and have located a test well.

Drilling for gas has begun in Young Township, Indiana County, Pa. It is the intention of the operators to give it a thorough test. They will go down 4,000 feet unless they find gas before that.

Quiet but effective efforts are being made to revive the Citizens' Natural Gas Company at Lafayette, Ind., with a view to supplying the city with the fuel. About $1000,000 has been raised by the company. It expects to get gas from the Kempton field.

The Chartiers Valley Natural Gas Company is being sued by certain residents of Glenfield, Pa., who claim that salt water from the wells of the company has saturated the soil and spoiled their springs of water for domestic use, for which they want damages.

A cablegram from St. Petersburg dated Dec. 23, says that the authorities of Batoum have refused to sanction the Rothschilds' scheme to lay pipes through that town to convey petroleum from the wells directly to the ship's side. Their objection to the plan is that it would do injury to small traders.

Boring for gas is still going on in the vicinity of the village of Ruthven, Ont. All the farmers in that neighborhood have signed an agreement not to allow any boring for gas to be done on their farms except by the company now engaged at that work. If necessary, a depth of 3,000 feet will be reached, but the company expects to find the fluid much nearer the surface.

The citizens of Sparta, Ill., are celebrating over the success of gas well No. 4. From the gas at No. 4 the flames leap to a height of 50 feet, burning from a pipe 5 inches in diameter. Each succeeding well seems stronger than the others. From present indications Sparta will treble in population during the next year. New buildings are reported as being built at a rapid rate, and real estate is booming.

Last summer the proprietors of four large glass houses in St. Clairsville, O., got out a temporary injunction against the Wheeling

Natural Gas Company to restrain it from interfering with their gas supplies. The court later made the injunction permanent. The Wheeling Company appealed to the Circuit Court. Recently the case was tried, and the company succeeded in having the injunction removed.

The Standard Oil Company's tank ship, the "Hafis," which was badly damaged in the Hunter's Point fire which took place about three months ago, went up the river to the oil works on Wednesday. For more than two months past she has been undergoing repairs in the Atlantic Basin. A great portion of the plating on her deck and starboard side was so badly injured that it had to be replaced, as well as nearly all her rigging.

A number of large Chicago manufacturers are figuring on the introduction of oil instead of coal for steam purposes. The Union Steel Company has already partially effected the substitution, both in their battery of boilers and in the furnaces for heating steel ingots. The Chicago Drop Forge and Foundry Company uses it in open fires and forge fires; and the Chicago Arc Light and Power Company and the Calumet Iron and Steel Company have begun necessary alterations with a view to the substitution.

The Standard Oil Company has decided to rebuild their big barrel factory which was burned a short time ago, with almost twice the capacity it used to have. That will make it one of the largest cooper shops in the world. The bulk of the barrels used by the Standard will then be made in Pittsburg. Nearly $50,000 worth of new machinery will be put into the new works. Some of this will be ingeniously improved over the apparatus that was destroyed. The new machinery will include 12 steam joiners, 16 heading joiners and about 10 "Yankee coopers." Pittsburg is the nearest market for staves and heading. The Allegheny Valley Railroad and Allegheny river bring them right to the doors of the Standard's factory. This is more convenient than either Buffalo, Philadelphia or Cleveland are to the stave markets. Hoop iron is made by the thousands of tons in Pittsburg, and all transportation on it is therefore saved. In case of emergency this advantage is great. For instance, at last week's fire, 100,000 sets of hoop irons were ruined by the fire. These were worth $10,000.

OBITUARY.

GEORGE H. KEITH.

Mr. George H. Keith, who died at his home, No. 293 Lenox avenue, last week of heart disease after a short illness, was well known to the medical fraternity of this and other cities. He was born in Dover, N. H., in October, 1840, and came to this city with his parents at the age of twelve. He early became an active partner with his father, Dr. Bethuel Keith, who established the business of manufacturing proprietary goods at No. 41 Liberty street, under the firm name of B. Keith & Co. Since his father's death, five years ago, Mr. Keith has been the senior member of the firm, which has retained the same name, but is doing business at No. 75 William street, where it will be continued by his son and his brother. He leaves a wife, a married daughter and two sons.

CORRESPONDENCE.

This column is always open for the expression of public opinion, but the REPORTER assumes no responsibility for the views expressed by any correspondent.

"Pudding" Opium.

PHILADELPHIA, Dec. 22,

Editor OIL, PAINT AND DRUG REPORTER:

Your correspondent who objected to the use the name "Druggists Opium" for the adulterated stuff which barely contains 9 per cent. of morphia, was correct in his conclusions, as "druggists" quality is known to be superior and has a good reputation abroad, where it commands good figures. Your suggestion that the name "pudding" be substituted is sensible and should be generally adopted.

S. K.

CHICAGO LETTER.

Special correspondence of the REPORTER.

CHICAGO, December 22, 1888.

The sensational feature of the market this week has been the advance in linseed oil to 57c for lots of from one to four barrels, and 56c for five barrels and upwards. The rise was inaugurated by some of the concerns identified with the existing combination, but has not as yet been met by the independents. The trade generally regard the enhanced value as legitimate, in view of the steady skyward ascent of seed. Crushers claim and jobbers generally concede that with seed at the figures indicated by to-day's quotations, producers might reasonably ask 60 cents per gallon and still exact from buyers nothing more than a legitimate and moderate manufacturers' profit.

Notwithstanding these indisputable facts, purchasers are chary, not to say timorous, and are buying for the most part only in quantities sufficient to supply immediate and possibly urgent wants. More than one cause may be assigned for the adoption of such a policy on the part of those who admittedly have little oil on hand at present, and certainly must have it by-and-by. In the first place, that oil should command 56c right in the middle of the dull season is in itself a reversal of the experience of many years past, and it takes time for the average commercial mind to grasp the situation. Again, there is a latent suspicion that crushers will not be able to maintain present prices in the face of a limited inquiry, especially should the seed market (the chief factor in the situation) unexpectedly decline. Besides all which jobbers, as a rule, are pretty nearly all in the same boat as regards stocks, and it is thought that any move on the part of any particular buyer would soon become public, and that in consequence all might "start about even."

This is all very well, but in such calculations several important (if not vital) considerations seem to be ignored. To begin with, there doesn't seem to be any palpable cause for any falling off in the seed market. Estimates as to the year's crop are growing smaller as the days shorten. The lowest figures that I have yet heard named have been 7,000,000 bushels, but these were mentioned in a quarter presumably identified with the bull interest. The belief has grown apace here until it may be said to have become a settled conviction—that the seed market is under the domination of men who know where practically every bushel of seed is, and who might, if they were disposed to reveal "the secrets of the prison house," accurately forecast receipts for the future. If this be so—and this week's flaxseed market affords incidental corroboration—the only limit in the upward course of seed will be the price at which Calcutta seed can be placed in the West with advantage to crushers. I have been shown by disinterested parties figures which go to show that more than one mill outside of the combination is extremely short of both oil and seed, and that the present situation can have but one outcome—considerably higher prices in the flaxseed market and a marked advance in oil at the opening of the busy season. Already are heard mutterings of a gathering storm in the form of rumors that next week will see a still further advance of two cents in oil. How far such reports may be characterized as authentic is hard to say, but they have reached my ears from quarters which incline me to accord them considerable credence.

Mr. F. D. Adams (president) and Mr. Geo. J. Morton (secretary) of the Groton Linseed Oil Co., of Groton, Dak., have visited Chicago this week. The company of which they are officers is a comparatively young one, and the gentlemen were looking for machinery. They report that the crop of flaxseed for the current crop year has been already substantially marketed, and that the quantity at present held back by growers is insignificant.

The demand for cake is not all that crushers' fancy would like to paint it. Foreign advices are not of the most encouraging description, but holders are generally firm believers in an approaching better state of affairs. In consequence there are no anxious sellers, and crushers and brokers alike still maintain that there is no change in the aspect of affairs.

FLAXSEED.

As was foreshadowed by the preponderance of shipments over receipts last week, the Inspector's statement at the beginning of this week showed a falling off in the amount in store in public elevators, which reached to 24,184 bushels, the exact figures being respectively 379,763 bushels and 403,947. On the corresponding date of 1887 there were "visible" in the same class of receptacles 440,409 bushels. It is worth mentioning, in passing, that all the seed held by elevators this week was "No. 1," while a week previous there were 2,272 bushels of "rejected" as against 3,104 one year before. Total inspections in, have aggregated 108 cars for the past week, distributed as follows: Of No. 1, 100 cars; of rejected, 2; and of no grade, 1; total, 103 cars. Per contra, there have been inspected out 59,469 bushels, all being graded as No. 1.

As compared with last week, the receipts show a decrease of 9,432 bushels and the shipments an increase of 8,992 bushels.

The tendency of the market has been upward and its general course may be outlined as follows: On Monday cash seed notwithstanding comparatively liberal receipts, opened at $1 56, which was about ⅛ cent above last Saturday's offerings; and the market rapidly advanced to, and closed at $1 58. Light receipts and limited offerings caused another advance on Tuesday despite the fact that there was little demand for cash seed. No 1 opened at $1 58, sold up to $1 60, and closed at $1 59, sales being effected at each of these quotations. On Wednesday the inquiries exceeded the offerings and there was some competition among buyers. The result was another, and rather sharp, advance, the market opening at $1 59 and closing at $1 61⅛. Offerings on Thursday were small, but so also were the receipts. Buyers were not urgent but sellers were firm, and the market advanced another ½c, closing strong at $1 62. Neither yesterday nor to-day witnessed any abrupt change. On Friday, however, the bull element scored an advance of about one cent—the market for No, 1 cash seed closing at $1 63 with sellers as firm holders. Trading was very light but the small offerings were quickly (not to say eagerly) taken. As during all the week, lower grades were nominal, but variations in quotations were small enough to disclose more or less anxiety to buy

Future deliveries may be said, on the whole, to have sympathized with cash seed, although year has been the centre of interest, there having been witnessed more or less anxiety to buy in the way of settlement. In other words, it is commonly surmised that the "short" interest is seeking to cover. Friday found some shorts yet uncovered, and year sold (but only moderately) at $1 62½. January was saleable at $1 63, but for May there were neither sellers nor bidders. Reviewing the week's market, one is impressed with a few cardinal facts. In the first place, receipts have been, on the whole, rather light. In the second place, the offerings have fallen below the receipts. In the third place, notwithstanding light receipts, moderate offerings, and an apparently indifferent demand, seed closes for the week at a substantial advance.

OILS.

Lard oil shows little change. Extra may be quoted firm at 68 cents, with lower grades unchanged. The demand has rather fallen off—at all events, it certainly has not improved.

Oleo has shown little change during the week. Local manufacturers of butterine have hoped for concessions which have not been granted. Private cablegrams received by melters have made the latter firm holders, and, notwithstanding a trifling weakness in the butter market at home and the receipt of not-too-encouraging advices from abroad, producers are prepared to insist upon payment of their own demands. Witness the fact that exportations from Chicago this week have exceeded those of the six days ending Dec. 15.

PAINTS.

As regards business in paints, there is practically none. Stock-taking seems to be the order of the day among both sellers and buyers, both of whom concur in heaping maledictions upon the head of a dullness which is only incidental to the season. Prices remain unchanged, and there exists the same harmony which has ruled for many months past. It is said that dealers in mixed paints, in view of the higher prices of raw material, are disposed to advance prices, but if any concerted action has been determined, the movers have not taken the general public into their confidence.

In local trade circles some surprise was created by the resignation of Mr. House as the Chicago representative of the well-known house of J. W. Masury & Co. The successor of Mr. House—Mr. J. D. Seymour—has been known to the trade as a successful salesman for the house for many years.

DRUGS.

Quietude—that sort of quiet which seems to be inseparable from the season—appears to have settled down upon the local drug market. The taking of inventories seems to be the order of the day, and apparently neither wholesalers nor retailers can find time to fret themselves regarding coming contingencies. Speaking generally, the entire list may be characterized as "steady to firm." In other words, the local market shows staples as stable and minor articles as sympathetic. The leading houses seem to be well satisfied, not only with the course and volume of business for the year but even for the season. CALUMET.

CUSTOMS DECISIONS.

GLASS.

The decision of surveyor of customs at St. Louis at specific rate per pound, according to size, on so-called colored glass, imported per Zeeland, August, 1888, by F. A. Drew Glass Company, claimed to be dutiable at 45 per cent. ad valorem for stained glass, is affirmed. (Dec. 12).

MISCELLANEOUS.

The Meeting of Western Glass-Makers.

At the meeting of the Western Window-Glass Manufacturers' Association, which was held in Cincinnati on Thursday last, about all the leading firms west of Pittsburgh were represented. Among those present were J. D. Catlin, of Ottawa, Ill., President; William Loeffler, of Pittsburgh, Secretary; C. S. Zandy, of Vevay, Ind.; J. W. Knox, of New Castle; H. B. Vancleve, of Cleveland; L. S. Cunningham, C. O. Smith, A. C. Dravo, J. A. Chambers, of Pittsburgh; J. J. Wright, of New York; R. D. McEwan, of Glasboro, N. J.; J. B. Sweetser, R. S. Lyons of Marion, Ind.; G. Cash, of Streator, Ill.; L. W. Monbourg; F. Caples, of Fostoria, O.; J. E. Stoleberger, of Toledo, and W. S. Hall, of Findlay, O. If any action was taken regarding the proposed pool, it has not been made public. The reports so far received make no reference to the report of the committee on reorganization, although it was understood that the meeting was called for the express purpose of hearing that report and acting upon it. There is not much doubt, however, that the report was presented and action taken, but probably the final arrangements for the organization of the pool will not be made until the meeting of the National Association in Washington next month.

One of the delegates to the Cincinnati meeting is quoted as saying to a reporter: "We hold meetings similar to this at different cities every four or six weeks. They are for the purpose of consultation in regard to prices and all matters pertaining to the business. We jointly fix prices, but our association is not a trust, nor do we intend to turn it into one. There will be no increase in prices as a result of this conference. The business outlook is fairly good and there is no prospect of labor troubles."

Secretary Loeffler stated that nothing but routine business was transacted, and denied that there was any effort to form a trust or combination, the interests of the trade and outlook for future business being the only subjects discussed. "There is but one problem," said he. "We will form a combination to meet labor, and that problem is not up for solution just now."

Mr. Raynolds' Affliction.

The numerous friends of Mr. C. T. Raynolds learned with profound sorrow last week that his malady had become worse, and that it was necessary to have the case considered by a sheriff's jury on lunacy. A decision is expected next Thursday, but whatever may be the result the firm of C. T. Raynolds & Co. will continue as usual. In private, social and business circles the deepest sympathy is expressed for the sufferer and his family. Gen. E. L. Molineux, who has been a warm friend and business partner for many years, voiced the sentiment of all who have had speaking acquaintance with Mr. Raynolds, in saying that he is one of the noblest and most self-sacrificing men who ever lived. During his career of 75 years he has made many fast friends.

The unfortunate ailment is due to insomnia and a severe cold contracted during the blizzard last March. He went to Bermuda last April, but returned without receiving much benefit.

Business Announcements.

A whisky distillery has been erected by Arkledge Bros., in Winchester, Tenn.

The De Soto Cottonseed Oil Mills, of Memphis, will be moved to another location.

The Buchel Milling Company contemplate building a 20 ton cottonseed oil mill in Cuero, Texas.

Dr. H. W. Ewbank, of Spartanburg, S. C., contemplates starting a medicine factory in Atlanta, Ga.

William Zettmann, manufacturer of soap, candles, etc., has received permit to erect new building in New Orleans.

R. L. Godbold, of Dallas, is contemplating starting a soap factory and organizing a stock company to operate in Marshall, Texas.

R. L. Godbold, of Dallas, contemplates starting a soap factory in Jefferson, Texas. A stock company will probably be organized.

J. B. Underhill, who is erecting a turpentine distillery in Fayetteville, N. C., will manufacture a common varnish in addition to rosin oil.

The Arkansas Soapstone Manufacturing Co., capital stock $500,000, is being organized in Little Rock, Ark., to mine and manufacture soapstone.

Charles E. Brown, R. B. Godley, R. H. Stewart, R. H. Porter and others have chartered the Dallas (Texas) Soap and Manufacturing Co., capital stock $25,000.

B. F. Nourse Importing and Manufacturing Company of Chicago has been organized; capital, $10,000; incorporators, A. M. Clute, B. B. Ryan and J. T. Nicodemus.

The Foos Manufacturing Co., of Springfield, O., are doing an immense business, and are running night and day in order to keep up with their orders for their scientific mill.

The Cleveland Petrolatum Co., Cleveland, Ohio., manufactures a full line of holiday goods from petroleum, consisting of cold creams, cosmetics, etc., Send for their circular.

The Detroit White Lead Works, of Detroit, Mich., are placing upon the market a line of paints and colors that attracts the attention of the trade everywhere. Send for their new circular.

A stock company is being formed in Wynnesboro, Va., to secure the establishment of manufacturing enterprises by donating sites, etc. The company will have probably 10,000 acres of land.

J. Gardner, of Elgin, Ill., and J. Baker, of Gloversville, N. Y., are prospecting with a view to organizing a $25,000 stock company to start a moss factory in Savannah, Ga. A factory with a daily capacity of one ton is stated to cost about $8,000.

Robert S. Bradley and Peter B. Bradley, of Boston, Mass.; Louis F. Detrick, John U. Detrick and William H. Detrick, of Baltimore, have chartered the Bradley Fertilizer & Chemical Co., capital stock $100,000, with headquarters in Baltimore.

Henry O. True, William V. Gould and others are directors of the recently organized American White Lead & Color Works of New Orleans. They will put in machinery at once for manufacturing white lead, putty, colors, etc. Capital stock is $15,000.

The Mississippi Glass Works of St. Louis are running night and day in turning out fine qualities of cathedral and ondoyant glass. Samples shown us are simply exquisite in design and will be sure to take with the trade. This house always believes in fair dealing with

patrons, consequently there is a rush for goods.

J. S. Jarratt will develop a kaolin mine in Sylva, N. C., and erect grinding machinery. Plant will cost about $40,000. He has organized a $500,000 stock company. Thos. Bracken of New York is president; Mr. Jarratt, vice-president; H. N. Hopper, Brooklyn, N. Y., secretary, and Hugh O'Donnal of New York, treasurer.

B. B. Beardsley, machinist and founder, Waterville, New York, is manufacturing the original Harris Paint Mill in seven sizes. He guarantees them made from iron, adapted to long wear, and every piece made duplicate by gauges, so it can readily be replaced in case of accident. He has made several valuable improvements on his water cooled gang mills, and will be pleased to furnish information and references upon application.

The American White Lead and Color Works of New Orleans, La., have contracted with Chas. Kaestner & Co., Chicago, Ill., for the complete machinery for their new plant, including their double 30-inch self adjusting lead mills with mixers, feeders and coolers complete, also their Western mills and mixers. The Iowa Mineral and Ocher Paint Co., Des Moines, Ia., have also contracted with the same firm for a complete impact pulverizer plant for reducing their iron ores to paint stock.

B. F. Ruth & Co., paint manufacturers, of Reading, Pa., send us samples of their reliable ready mixed paints and wood stains, and if these were generally distributed by the firm the result would certainly be gratifying, as an examination ought to greatly increase the demand. A strictly sanitary coating for all interior surfaces is also manufactured and known as "Calaxine." The latter is ready for use and is preferable to kalsomine as it contains no glue, is cheaper and better, and can be had in 15 beautiful tints.

Samples at the Appraiser's Stores.

"There has always been more or less trouble under every administration over the sampling of imports by the Apbraiser's department," said a Custom House officer in speaking of the recent upheaval in the Philadelphia establishment, which resulted in the removal of Appraiser Baker and Assistant Appraiser Hoffman. "And I presume that there will be trouble as long as there is a Custom House," added the official.

Every dutiable article brought to the port from a foreign country is supposed to be inspected by the customs men before it is allowed to be landed. The value of the import and the rate of duty to be paid upon it is determined by the Appraiser or the examiner under him. In consequence of this the Appraiser's Department is made a storehouse for samples, and there they are examined at leisure.

During the administration of a couple of Collectors there was a general howl on the part of importers over the manner in which their goods were sampled, and complaiuts of oversampling were common.

The Government has had the same trouble in years gone by with the New York Custom House, and, in fact, at all the big ports in the country. The employes look upon the samples as legitimate perquisites, and though they are supposed to be returned to the importer they are generally carried home by the men employed about the appraiser's stores.

However, now that Collector Cadwalader of Philadelphia has put his foot so heavily down on the practice, a check will be put to it at least until the retirement of the present administration. The abuses have existed all through the term of the present Collector,and it is a matter of some suprise that efforts were not made in the past to correct them.

As the importer desires to pay as little tribute as possible to the Government he finds fault with the department when the price is advanced, as is often done, and lawsits or appeals to the Treasury Department follow. To protect the department against such suits, the Examiner retains the samples for two years,when they are returned to the importer, if he care to send for them, or they are given to the storekeeper and sold, and the money turned into goverument. That is the theoretical plan. Complaints of oversampling are made when the examiner insists upon taking out more samples than is usually required for his purpose. The examiner generally has the department to back him up, because Secretary Fairchild has instructed all appraisers to secure "ample" samples and retain them until it becomes evident that the importer will not bring any suit against the Government to recover excessive duties. Cases have sometimes been lost by the Government because it did not have a sufficient sample to sustain the decision of the Appraiser.

The Salt Trust.

The reported effort of the English Salt syndicate to get control of the American deposits by persuading the domestic producers to sell out to the syndicate or become members of an international pool is not evidently making much progress, and if such a scheme has been attempted, which seems possible, there is small prospect that it can be carried out. Reports from the different salt fields either deny that the manufacturers have heard anything of the project or else state that they are unalterably opposed to becoming parties. The general report is that the plan is not at all feasible, under any circumstances.

According to a special dispatch from Syracuse, Mr. John W. Barker, vice-president of one of the largest concerns in the Onondaga field said: "The formation of such a trust as that stated in the Warsaw dispatch to be in contemplation would be impossible. To understand this, you have only to consider that the supply of salt in this country is inexhaustible. Now suppose this syndicate should buy up all the works in operation at the present. What would be the consequence? Why, such an impetus would be given to the industry as has never been known in its history. It is not too much to say that wells would be sunk in every State in the country, because there are salt beds everywhere. It wouldn't require much of an advance over the present price, either, to bring about this condition of things. A raise of 25 cents on a barrel would be quite sufficient. We are getting now about 75 cents, while Warsaw sells for 10 cents less and Saginaw from 15 to 20 cents less. One dollar a barrel wouldn't be an extravagant price by any means, but it would be enough to bring about an enormous development of the salt industry in the United States, and any trust formed on the basis of the present production, could last only for a very short time.

"To make the thing a success, all the new manufactories would have to be gobbled as they came into existence, and where, I'd like to know, could capital enough be accumulated for purchases on so extensive a scale as would thus be made necessary? The scheme is wholly impracticable, and, as I regard it, isn't worthy of serious thought. We don't want any English capital over here anyway. The United States is perfectly well able to take care of its own salt industry, and, if the Government would only give us a good tariff, that's all we would ask. Things are now beginning to assume a more hopeful aspect in regard to Onondaga salt than they have for years back. All we need is stronger brine, and there is a strong prospect of getting it from the foot of the Tully hills, or perhaps from a point even nearer than that. In that event local manufacturers will be supplied from that source, and they will be able to make money in the business."

Other manufacturers agree with Mr. Baker's views, and if there is such a movement afoot, as now seems doubtful, it does not meet with favor with the manufacturers at Syracuse.

Revising the Duty on Lead Ore.

The Senate resumed consideration of the tariff bill on Wednesday. Mr. Reagen called attention to the paragraph fixing the duty on lead ore and lead dross at 1½ cent per pound: with a proviso that lead ore containing silver, or silver ore containing lead, shall pay a duty of 1½ cent a pound. He referred to it in connection with ores from Mexico and said that the adoption of the proviso would break up smelting establishments in El Paso. He moved to strike out the proviso.

Mr. Allison said that the Finance Committee believed that lead introduced in connection with silver ore should pay the same duty as other lead did. He did not see why the lead contained in silver ore should be exempted from duty.

Mr. Stewart argued in favor of the proviso. The miners of the West felt much interest in the matter. With Mexican ores evading duty, the lead extracted from the silver ores in this country could not be got rid of at prices above the cost of transportation.

Mr. Teller said he was informed that the importation of Mexican lead ores this year would reach 80,000 tons, and that that would mean the closing up of silver mines in Colorado, Nevada, Utah and Idaho, and of every common lead mine in the United States. Miners in the West received the largest wages in the world, three or four times more than they received in Mexico, and twice as much as was paid for common labor in any other part of the United States. There was no complaint as to the price of lead in this country—the production being about equal to the consumption. This was a matter of special interest to the mining regions of this country, and the striking out of the proviso would be a blow at them.

Mr. Reagan argued that the cost of transportation from the Mexican boundary to smelting works in the United States would exclude ore that did not contain a large amount of silver. He did not think, therefore, that there was any great danger to the interest of American miners in permitting the law to stand as it is. Mr. Reagan's amendment was rejected—Yeas, 18; nays, 23.

Mr. Reagan then moved to amend by making the duty on lead ore and lead dross ¾ cent per pound instead of 1½ cents. Rejected.

The clerk then read the paragraph taxing lead in pigs and bars 2 cents per pound. Mr. Vance moved to reduce the rate to 1¼ cents. Rejected—Yeas, 18; nays, 23.

Mr. Vest moved to amend the paragraph as to quicksilver by striking out 5 cents a pound and inserting 10 per cent ad valorem. Rejected—Yeas, 18; nays, 22.

Mr. Harris moved to amend the paragraph relating to manufactures, articles or wares not specially enumerated by adding a proviso that no articles should pay a higher rate of duty than 98 per cent. ad valorem. Action on this amendment was deferred.

Association of Proprietors wanted in London.

An understanding among manufacturers of and dealers in proprietary goods is wanted in England. A correspondent advances the following proposition in two trade papers in London:

"We hear of rings in copper, salt, wheat, etc., and why not in patent medicines? As everyone knows, the country chemist has a very hard time of it now-a-days, and instances of his being unable to pay his way are becoming more and more plentiful. Anything,therefore, which will bring about a more satisfactory state of things, will, I am sure, be most acceptable, even if it be a ring, which in this case will do no harm to the community at large.

I take it for granted that the proprietors of patent medicines, etc., are, for the most part, chemists, and they would, if they had their choice, sooner see their brother chemists getting the profit on their preparations than the grocers making a draw of them, and selling them at cost price to enable them to get large profits on their teas.

If this be the case then, why cannot the proprietors of the chief patents combine at once and sign an agreement to supply only those wholesale houses who will agree to do solely with those who in their turn bind themselves not to sell below the market prices.

By such a scheme as this I maintain that everyone would benefit. Chemists would not then be so very anxious to push their own specialties, and consequently the sale of patents would increase, much to the satisfaction of the enterprising proprietors. The various patent medicine-houses would benefit by the increased sale, and I feel sure that chemists would not then begrudge them a little more profit than they now get, which cannot be much more than enough to pay rent, rates and packing.

Any vender of patents would, I am sure, be only too pleased to sign such an agreement as is mentioned above, and thus make a considerable addition to his slender profits without doing the public any serious injustice. I wish to make this point quite clear, as no doubt some people would say it would be unfair to the public. If so, do they not think it unfair that chemists should be called upon to pass examinations for the safety of the public, and then that they should have their legitimate profits thrown to the winds by the grocer,who has no risks or examiuation to pass.

Again, everyone will allow that the extra cost to the consumer of a box of pills, or say a few bottles of medicine per annum, would be so light that they would not notice it; but all these small amounts would make a vast difference to the country chemist who, as in my case, is situated in a town where all the doctors dispense their own medicines, and where there is a large and very close "cutting" general store.

It is all very well for some of the Bloomsbury square magnates to say that we should not sell things that do not absolutely belong to pharmacy and chemistry proper, but I should like them to come and live in the country for a time, and they would very soon alter their tune. I myself have gone a little further than many who now-a-days content themselves with passing the Minor only, but I find that so far the analysis I have done will only about pay for a good set of apparatus, and we cannot all be wholesale manufacturing chemists.

Some say that if my suggestions were adopted the sale of such articles as "Allen's Hair Restorer" would be interferred wite, because people would not pay 6s, and very wise of them. Then let the proprietors mark them 4s, which would allow a fair profit to the vendor, and get over the difficulty. I believe these extravagantly priced articles were the cause of all the trouble, as the temptation to the grocer was very great."

Unloading of Petroleum.

Replying to Lord H. Bruce, in the House of Commons, Sir M. Hicks-Beach said:—On this subject I have communicated with the Mersey Docks and Harbor Board, who have sent me the following statement:

It is quite true that tank steamers have discharged petroleum at the Herculaneum Dock. The petroleum is not, as is represented, pumped by laborers direct from the ship into barrels, but is pumped by machinery into three portable tanks which are placed on the quay of the said dock. Each of these tanks is provided with ten taps on each side, by which the oil is drawn off into casks which are placed under each tap. The operation is carefully watched, and there are men in attendance to superintend the filling of the tanks, and others are appointed to turn off the taps when the barrels are filled. Under each row of barrels a draining pan is placed for the purpose of collecting any small occasional overflow that may take place, and the pans are emptied as often as may be required. The barrels filled with oil which cannot be removed from the quay at once, either by carts or by ship, are placed in the Board's casemates, which have been excavated in the sandstone rock, and specially constructed for the storage of petroleum, Experience shows that the leakage on to the quay is inconsiderable, and not more than from barrels when the petroleum is imported in that form. The berth in which the tank steamers discharge is a considerable distance from the nearest dock entrance, and is situated in a portion of the dock which is set apart for the petroleum trade. I may add that, as regards the explosion at Bristol to which reference is made in question—the article in that case consisted of naptha, which is highly inflammable, and in the case at Calais which is also referred to, the cargo consisted of crude petroleum, which is also a highly inflammable article, containing as it does a large quantity of naphtha; whereas in the case of Marquis Sciciuna, which discharged in the Herculaneum Dock, oil was Russian petroleum, which is considerably over the Government flashing test, and is, therefore, much less dangerous than the articles above-mentioned, and is not petroleum within the meaning of the Act of Parliament.

Working of the Merchandise Marks Act in London.

The Commissioners of Customs in London console themselves with the reflection that between January 1 and March 31 they stopped, exclusive of goods sent through the parcels post, no fewer than 3,891 consignments from abroad, consisting of an aggregate of over 110,000 packages. A certain proportion of these impounded goods was, of course, ultimately allowed to pass, but all of them must have been subject to delay, overhauling, and expenditure of some kind. Taking these three months as a fair average, we may expect some 440,000 packages to be interferred with in the course of the year, says the *Chemist and Druggist*, and placing the average value of each package at the moderate amount of £5, we find that the act, as worked at present, will affect about £2,200,000 of foreign imported goods, or barely 3-5 per cent. of our total imports. The list of foreign goods which have been detained includes a wonderful variety of articles, from electric lamps and anchovies to tamborines and bathing drawers. It comprises a large number of goods more or less connected with the drug trade, such as Apollinaris water, bark, cattle medicine, chemicals, condensed milk, enemas, ether, feeding bottles, gum, medicinal spirits, mustard plasters, chloride of gold, perfumes, vapor inhalers, tartaric acid, willow boxes and many more; and it is a significant fact that in some instances the importers of the articles seized have abandoned their goods rather than comply with the customs requirements as to remarking. It is evident that the working of a measure touching so many different articles requires the utmost tact and care on the part of the customs officers, and these gentlemen have therefore been instructed in doubtful cases not to detain goods on their own responsibility, but only on "information afforded by persons aggrieved." And here the extreme difficulty of enforcing the act fairly all round becomes most apparent. The customs officer, for instance, is instructed not to trust to his own judgment where the goods suspected bear a name, initials, or trade-mark which may be the property of British firms, yet he is ordered to detain fortwith goods 'purporting to be the produce of certain countries, but reaching this country not in the usual routes of transit." This instruction, if adhered to, requires a more than average knowledge on the part of the Customs officer of the complicated roads and crossings of international trade, and of the points of production of the numberless articles which arrive at our ports day by day. Such English words as "photographs," "stamps," "scrap-book," "album," &c., printed on the foreign-made goods to which they refer, are now admitted by the Customs; but on the other hand, goods coming, say, from Germany with Spanish, or from France with Italian trade-words upon them are stopped, unless the words "made in Germany" or "made in France" are added. How our Customs officers are to know whether the words on the goods are Spanish, French, Italian, or what not, is left unexplained. Again, supposing goods to come from Hamburg with a firm-name which is clearly German—say Hans Breitmann—they are to be passed; but if bearing an English name—such as John Brown—they should, the Customs say, be detained unless stamped "made in Germany" underneath. But there is no attempt to deny that another Hans Breitmann may be making the same goods in England, and that his German namesake is using his name for the purposes of unfair competition, while John Brown may be a perfectly honest and legitimate Britisher, whose misfortune, rather than his fault, it is to have his works situated in Hamburg. To illustrate the working of this clause, we may point out that a certain disinfectant is made in Germany by two competing firms, one bearing the English name of Pearson, the other the German cognomen of Artmann. If the Customs enforce the clause they will, of course, stop the former's goods from importation here, while his rival's will be freely admitted, a proceeding manifestly unfair to the Englishman. Numerous other examples of unequal justice might be cited, but we have sufficiently indicated the pitfalls which hedge round the conscientious enforcement of the act to show that our Customs authorities will do well to bear in mind the worldwise French diplomat's motto, *Surtout pas trop de zele*. The Merchandise Marks Act was, no doubt, passed with the best intentions, and if discretely applied is a powerful weapon

against fraudulent and unfair competition, but it may be very easily brought to defeat its own purpose by being enforced either too mechanically or too zealously.

Boehringer's Monthly Circular.

The following is from the December circular of C. F. Boehringer & Son:

Quinine.—The upward movement mentioned in our report of last month received a check early in November, partly through the increase in the shipments from Ceylon, but chiefly through the strenuous efforts of a certain speculator, who, for reasons of his own, sought to depress the market.

The Ceylon exports of cinchona in the new season, viz., from October 1st to November 24th, amount to about 2,000,000 lbs., as against 1,500,000 lbs. last year; on the other hand, stocks in London show a decrease of about 2,000 packages as compared with last year's figures at the same period.

By the said speculator sales were made of some 50,000 ozs. at 1s. 3¼d. to 1s. 3⅜d., which however failed to make the desired impression on the manufacturers. There are still large orders for forward delivery at 1s. 4d. in the market which cannot be filled.

On the 3d inst. the Dutch Government will make its annual purchase of 17,500 to 21,000 oz. sulphate and about 2,000 oz. hydrochlorate quinine; on the same day, and on the 13th inst., the French War and Marine Department will accept tenders for about 45,000 oz.

Camphoric acid.—This preparation has been known for years, but it is only lately that the medical profession has resorted to its use. Dr. Reichert, Dr. Milsel, Dr. Fuerbinger and other physicians have recommended it as an excellent remedy in cases of acute bronchitis, catarrh of the larynx and ordinary colds, as well as against the nightly perspiration of consumptives. In small doses camphoric acid is absolutely harmless, large ones cause irritation of the glands of the stomach.

Camphoric acid dissolves readily in alcohol, ether and fatty oils, rather slowly in water.

Codeia.—English makers have raised their price to 15s and 16s and most of the German manufacturers are under contract up to March. We are in a position to supply this article at a comparatively low figure.

In recent publications on the treatment of bronchitis and the tormenting cough of consumptives, codeia is very favorably spoken of especially as being not nearly so dangerous as morphia. Codeia may be given for a long time without producing the evil effects which so frequently attend the continued use of morphia.

Cocaine.—In almost every scientific journal Dr. Liebermann's and Dr. Giesel's method of transforming into cocaine the by-alkaloids of the coca leaves by reducing them in succession to ecgonin, benzoyl-ecgonin and cocaine, is commented upon. We may be permitted to state that long before the publication of this process we have carried out the same idea in practice, though under a somewhat different form, for which we applied for a patent.

The expectation that this discovery will greatly influence the price of cocaine is erroneous, as the amount of the alkaloids in question is too small.

Salts of Lithia.—In consequence of a "ring" formed by the Continental makers prices have advanced considerably, and our advantageous quotations are deserving of note.

Methylated Spirits.

REPORT OF COMMISSIONER OF INTERNAL REVENUE.

Inquiry having been made at this office by members of Congress as to the practicability of withdrawing spirits from distillery warehouses free of tax for use in the mechanical arts, and protecting the revenue against fraud by methylating the spirits in bonded warehouses established for the purpose, the microscopist of this office was requested to make experiments in the chemical laboratory for the purpose of ascertaining whether such spirits could be demethylated. It appears from his report herewith that he has succeded, by the use of a small still, in separating the methyl or wood alcohol from the ethyl or taxable alcohol and in deodorizing a portion of the ethyl alcohol through the use of bone black and other chemical substances.

It may be urged that if the demethylation can not be accomplished without the use of a still, the operator is readily liable to detection because of the special surveillance required by the internal revenue laws in the matter of stills and distilling, but I do not take this view of the case. The internal revenue laws do not prohibit the use of stills by persons other than distillers of spirits, and, as a matter of fact, many druggists and others use stills on their premises. It is true that these laws prohibit the making of a mash fit for the distillation of spirits except on the premises of a distiller, brewer, or vinegar manufacturer. It is also true that the process of mashing is readily discoverable by the peculiar smell which pervades the premises on which the business is conducted, but the process of demethylation does not involve any process of mashing or fermenting, nor the use of the large still which even the smallest distillers who produce spirits from a mash are compelled to use. The still used in this office was among the smallest of the stills which druggists and others, not distillers, are permitted to use.

REPORT OF THE MICROSCOPIST ON METHYLATED SPIRITS.

The question whether methyl or wood alcohol can be separated from methylated spirits, by distillation or otherwise, and leave the ethyl alcohol contained therein in such a state of purity that it can be placed on the market at a profit, has been the subject of several investigations by special committees in England and Germany, and of one in this country.

The English committee, consisting of Professors Graham, Hofmann and Redwood, in their reports of July 24, 1854, and January 3, 1855, reached the conclusion that there was no economical method then known for separating the two alcohols, and that the presence of a very small quantity of methyl alcohol rendered the mixture unpalatable; they recommended the use of purified wood naphtha for this purpose.

In Germany the subject has been investigated by Kraemer, Gorick and Dietze. They recommended the use of the first and last very impure products obtained in the distillation of crude wood spirits.

Drawing their information from the reports of these committees most writers of text books on the subject declare that methylated alcohol can not be made drinkable by any commercial process. These conclusions being based on the results of laboratory experiments where no distilling apparatus approaching the perfection of a modern column still for differentiating and separating liquids of different boiling points were employed, should not be regarded as final.

As the English law and regulations against any attempt at removing or purifying the methyl are very stringent, it may be inferred that such attempts have been successfully made.

Methyl alcohol is the lowest form of the alcohol series, and when pure is a colorless, mobile liquid, having a vinous smell closely resembling that of ethyl alcohol. It has a specific gravity of 0·8142 at 0° C. (32° F. (Kopp). The boiling point, as stated by vrrious observers, varies from 58·6° to 66·5° C. (137 to 152° F.), owing to the great difficulty of obtaining it in a perfectly anhydrous condition. The difference between the densities of mixtures of methyl alcohol and ethyl alcohol with the same proportions of water is so small that the tables ordinarily used for the latter may be employed for most purposes in ascertaining the strength of the former.

Methyl alcohol is miscible in all proportions with water, ethyl alcohol and ether. In its solvent and chemical properties it closely resembles ethyl alcohol.

Wood naphtha, pyroxylic spirits, is the name given to the impure commercial methyl alcohol. It is a very complex liquid, containing variable proportions of methyl alcohol, acetone, methyl acetate and formate, allyl alcohol, aldehyde, water, etc. The best commercial wood naphtha contains about 95 per cent of methyl alcohol, the common varieties from 75 to 90 per cent, and sometimes going as low as 30 to 40 per cent. It has a very characteristic odor, and if taken internally will generally produce nausea and other deleterious effects. Pure methyl alcohol, however, is free from these objections. Cases may be cited from the English court reports and daily papers where persons habitually drank methylated alcohol without any other toxic effect than that common to ethyl alcohol.

The higher alcohols, propyl, etc., have a greater toxic effect than ethyl alcohol. Brockhaus has recently personally investigated the effects of propyl, butyl and amyl alcohols on the system. He found the disagreeable symptoms, giddiness, nausea, etc., to increase with the molecular weights of the alcohols, and amyl alcohol itself proved to be a very violent poison. According to the experiments of Rsbuteau, amyl alcohol is fifteen times as intense as ethyl alcohol, and is even fatal in small doses. Amyl alcohol is one of the chief constituents of fusel oil.

An addition of 10 per cent. of wood naphtha to ethyl alcohol lowers the boiling point of the mixture 3·3° C. (6° F.) (Ure.)

Ethyl alcohol, spirits of wine, ordinary or grain alcohol is next to methyl alcohol in the ascending order of the alcohol series, is the alcohol on which the internal revenue tax is levied, and is the alcohol with which most people are familiar. It is a limpid, colorless liquid, of a hot pungent taste, and has a peculiar pleasant smell. According to Mendeiejeff, absolute alcohol boils under the normal pressure at 78·3° C. (173° F.), and has a specific gravity of 0·80625 at 0° C. (32° F.) compared with water at its maximum density 4° C. Dr. E. R. Squibb, of Brooklyn, N. Y., in 1884 obtained alcohol of a specific gravity lower than that recorded by any previous observer, viz., 0·80257 at 4° C., or 0·80591 at 0° C. compared with water at its maximum density (4° C.).

Ethyl alcohol is miscible with water in all proportions, a considerable evolution of heat and contraction in bulk taking place on admixture. It is nearly impossible to remove the last traces of wbter, owing to the tendency of alcohol to quickly absorb moisture from the air. It is a powerful solvent for fluid and solid bodies, both organic and inorganic. It absorbs many gases with considerable avidity. As found on the market, ethyl alcohol often contains traces of higher homologues, of aldehyde and acetic acid, of volatile oils, of various fixed impurities, both organic and inorganic, and is more or less mixed with water.

In September, 1882, a committee of the National Academy of Sciences, consisting of Professors Ira Remsen, C. F. Chandler and G. F. Barker, in their report on methylated spirits to the Hon. Green B. Raum, commissioner of internal revenue, reached the following conclusions:

"That by treating the mixtures of ethyl alcohol and wood spirits (in the proportion proposed in the bill now before Congress) with bone black, filtering, adding a caustic alkali—as, for example, caustic potash—and then distilling with the aid of the Hempal tube, the principal product obtained is nearly free from methyl alcohol, and that the odor and taste of this product are not very marked. At the same time, even in the best product thus obtained, the odor and taste characteristic of wood naphtha can be detected, though only with difficulty, by those who are unskilled in such matters. We believe that the method employed by us which gave the best product could be applied economically on the large scale, and a product fully as good as our best, if not better than it, might thus be obtained." (Senate Mis. Doc. No. 85, Forty-eighth Congress, first session, 1884, p. 62.)

They submitted their best specimens to some dealers in alcohol and alcoholic beverages and were informed that the purified product might easily be used in the manufacture of low-grade whiskies and rum.

The committee used in their experiments a Hempel tube to represent on a laboratory scale, the column still used by the manufacturers of alcohol. "This consists of a glass tube about 1½ inches in diameter, and 3 feet long, filled with glass beads. the tube is inserted in the cork of the distilling flask, and the vapor of the distilled substance is caused to pass through the tube before it reaches the condenser. (Loc. cit,, p. 61.)

Although no mention is made in their report of the quantity of alcohol used in their experiments, I think it may be assumed that the quantity employed in any one experiment was less than one gallon.

In the experiments conducted in the laboratory of this office a small 3-gallon still, steam jacketed, by which means the temperature was kept well under control, and furnished with a column head having a series of diaphragms which offered more or less condensing surface, according to the set used, was employed. Such a still conforms more to the large column still used by manufacturers than the Hempel tube employed by the committee.

The column head is 1 foot high and 2 inches in diameter. The set of diaphragms, which can be inserted in the head, divide the space into from seven to twenty-one equal parts. The vapors are then partially condensed and drop back into the lower part or boiler. The whole apparatus is made of the best tinned copper and is provided with a block-tin worm. Openings for thermometers in ehe boiler and at the top of the column are made which can be closed with corks. The apparatus worked very satisfactorily, and quantities distilled by it were large enough to determine what might be done for commercial purposes.

The ethyl alcohol used in the experiments was purchased from a firm of large chemical dealers in New York; it was slightly colored from tannin and other extractive matter derived from the barrel in which it was kept, had a specific gravity, by the hydrometer standardized at 60° F., of 62° F. of ·841, corresponding to a content of 93·40 per cent. absolute alcohol by volume:

The wood naphtha, methyl alcohol, pyroxylic spirit, was purchased from she same firm; it was highly colored and had a specific gravity of ·841 at 61° F., corresponding to a content of 87·85 per cent. alcohol by volume.

The methylated spirit was made, at room temperature, by taking 90 per cent. by volume of the ethyl alcohol and 10 per cent. by volume of the wood naphtha, the proportions used in Great Britain; the mixture was colored by the latter to a considerable extent, and had a specific gravity of ·825 at 62° F., 92·75 per cent. by volume of absolute alcohol.

The methylated spirit so prepared was the starting point of all the experiments.

A larger loss of alcohol was experienced than would happen on a commercial scale, owing first, to the high temperature of the laboratory, which ranged from 90° to 75° F. during most of the experiments, causing by loss excessive evaporation; second, to the mechanical retention in the pores of the bone black of a considerable volume of the alcohol, as there was no means in the laboratory for filtering under pressure; and third, to the tank water employed for condensation not being cool enough to thoroughly condense the alcoholic vapors, although the distillation was purposely conducted very slowly.

The results obtained are stated in percentages of the original volume of methylated spirit taken for the experiment, and of the total volume of product obtained by distillation.

The bone-black used for filtration, was ground moderately fine and placed in a percolator, having a piece of fine copper gauze at the bottom, on which was first placed some course bone-black, then the fine. By proportioning the coarse and the fine, a mechanical filter was obtained that would allow of a more or less rapid filtration. By the use of long and narrow columns a greater surface was presented, thus allowing the bone-black to more fully act on the alcohol. One pound of bone-black was used to one gallon of alcohol.

The liter (1·056 quarts) was used as the standard volume for all measurements, thus permitting of the easy reading of percentages by volume at any course of the experiments.

FIRST EXPERIMENT.

Ten liters of the methylated alcohol were taken and filtered over bone-black. By this treatment the greater part of the disagreeable odor and all the color were removed. The alcohol was passed only once over the bone-black. The filtered alcohol was then placed in the still, steam turned on, and the distillate received in suitable vessels.

The first 12·50 per cent. of the original volume (16·125 per cent. of the total volume of distillate) contained the greater part of the wood naphtha. Specific gravity ·823 at 63° F.= 93·45 per cent. of absolute alcohol by volume. This can be used for the manufacture of varnish or burning in lamps. The middle portions of the distillate, 47·50 per cent. of the original volume (61·275 per cent. of volume of distillate) were saved, and are nearly free from the odor and taste of the wood naphtha. The specific gravity varied from ·8215 at 60° F., 93·60 per cent. alcohol by volume, to ·8255 at 60° F., 92·45 per cent. alcohol by volume in the different portions. The last portions of the distillate, 17·50 per cent. of the original volume (22·575 per cent. of volume of distillate) had a disagreeable odor and taste, and were rejected.

Ten gallons of methylated alcohol, of 92·75 per cent, of absolute alcohol by volume, would be equal to 18·50 gallons of proof spirits. These would yield by this experiment 5·5 proof gallons of alcohol that would be rejected, and 8·85 proof gallons of fairly demethylated alcohol.

SECOND EXPERIMENT.

Ten liters of the methylated alcohol were treated with 2·5 per cent. of recently burnt quicklime, coarsely powdered, with frequent agitation for twenty-four hours. This treatment had the effect of intensifying the yellow color. The alcohol was then filtered first through paper to remove the lime, and then through bone-black, which decolorized it. The filtrate was treated with 0·1 per cent. permanganate of potash dissolved in water, and allowed to stand for twenty-four hours, when it was filtered through paper and bone-black and distilled.

The treatment with lime raised the specific gravity from ·8244 at 60° F., 92·75 per cent. of alcohol bo volume to ·8215 at 60° F., 93·60 per cent. by volume. The addition of the watery solution of permanganate, however, lowered it to ·8272 at 60° F., 91·95 per cent. before it was placed in the still. Through the breaking of a flask, over 4 liters of this filtrate were lost, so that no percentage results are given.

The first and last portions of the distillate were received separate from the middle portions.

The middle portion of this distillate has such a faint taste and odor of the wood naphtha as to be nearly indistinguishable. Specific gravity ·8314 at 60° F., 90·75 per cent. of alcohol by volume.

THIRD EXPERIMENT.

This was a repetition of the second experiment, except that the quantity of permanganate of potash was increased to 0·2 per cent.

The first 12·50 per cent. of the original volume (10 liters of 92·75 per cent. alcohol, 15·74 per cent. of the total volume of distillate) had a specific gravity of ·8304 at 60° F., 91 per cent. of alcohol by volume, and was rejected.

The middle portions of the distillate, 57·50 per cent. of the original volume (72·41 per cent. of the volume of distillate) was very nearly tasteless. The specific gravity varied ·8367 to ·8437 at 60° F., 89·10 to 86·90 per cent. of alcohol by volume.

The last 9·40 per cent. of the original volume (11·83 per cent. of the volume of distillate) was rejected. As soon as the distillate began to have an offensive odor the steam was turned off the still. The last portion of the distillate, 6·25 per cent. of the original volume (7·87 per cent. of the distillate) had a specific gravity of ·8491 at 60° F., 65·10 per cent. of alcohol by volume. The contents of the still, 3·15 per cent. of the original volume (3·96 per cent. of the distillrte) had a specific gravity of ·9624 at 60° F. ,51 per cent. of alcohol by volume.

Ten gallons of methylated alcohol of ·8244 specific gravity at 60° F., 92·75 per cent. of alcohol by volume (18·50 gallons of proof spirit) would yield by this experiment 10·20 proof gallons of alcohol that is drinkable, and 3·65 proof gallons of alcohol that has a decided taste.

FOURTH EXPERIMENT.

Five liters of the methylated alcohol were treated with 2·5 per cent. caustic lime for twenty-four hours, filtered through paper, then diluted with 40 per cent. of its volume of distilled water, filtered over bone-black, treated with 0·1 per cent. of permanganate of

potash for twenty-four hours, filtered over paper, then over bone-black. The filtrate had a specific gravity of ·8261 at 60° F., 89·30 per cent. of alcohol by volume

The first portion of the distillate had a specific gravity of ·8537 at 60° F., 83·60 per cent. of alcohol by volume, and was rejected.

The middle portion of the distillate had a specific gravity varying from ·8617 to ·8700 at 60° F., 80·75 per cent., to 77·70 per cent. of alcohol by volume, and was the one most nearly free from smell and taste thus far produced.

The distillation was then stopped, and the contents of the still removed when sufficiently cool. This portion had a specific gravity of ·835 at 60° F., 22·45 per cent. of alcohol by volume.

FIFTH EXPERIMENT.

Twelve liters of the methylated alcohol were taken and first filtered over bone-black; the bone-black used in the third experiment for filtering the alcohol after treatment with permanganate was used for this purpose.

The filtrate was then treated with 2·5 per cent. of freshly burnt quicklime, coarsely powdered, for forty-eight hours (a Sunday intervening), then filtered through paper to remove the lime, and afterwards through a fresh portion of bone-black. This was then treated with 0·2 per cent. of permanganate of potash dissolved in water, and allowed to stand for twenty hours; then filtered over paper and finally over fresh bone-black. It was then distilled. It had a specific gravity of ·834 at 60° F., 89·95 per cent. of alcohol by volume. The distillate was received in small quantities, so as to keep it more distinctly separated. The first portion of the distillate, 8·333 per cent. of the original volume (11·111) per cent. of the volume of distillate), had a specific gravity of ·8258 at 60° F., 92·35 per cent. of alcohol by volume. It has a faint, disagreeable odor of the wood naphtha.

The next portion of the distillate, 4·166 per cent. of the original volume (5·555 per cent. of the volume of distillate), had a specific gravity of ·8256 at 60° F., 92·35 per cent. of alcohol by volume. It did not smell as strong as the first portion. The next portion of the distillate, 4·166 per cent. of the original volume (5·555 per cent. of the volume of distillate), had a specific gravity of ·8271 at 60° F., 91·95 per cent. of alcohol by volume. This had a very slight peculiar taste.

The next portion of the distillate, 4·166 per cent. of the original volume (5·555 per cent. of the volume of distillate), had a specific gravity of ·8308 at 60° F., 92·05 per cent. of alcohol by volume. The next six portions of the distillate, each 8·333 per cent. of the original volume (11·111 per cent. of the volume of distillate), ranged in specific gravity from ·8285 to ·8385 at 60° F., 91·55 to 87·90 per cent. of alcohol by volume, and with the two preceding portions are drinkable.

The last portion of the distillate, 4·166 per cent. of the original volume (5·555 per cent. of the volume of distillate), had a specific gravity of ·8488 at 60° F., 85·25 per cent. of alcohol by volume. This had a slight disagreeable taste and odor. On the basis of this experiment 10 gallons of the methylated alcohol of 92·75 per cent. of alcohol by volume (18·50 gallons of proof spirits) would yield 10·50 proof gallons of drinkable alcohol, and 3·03 proof gallons of alcohol fit for varnish or burning purposes.

Recapitulation of results of experiments on the basis of 10 gallons of methylated alcohol of 8244 specific gravity, at 60° F., 92·75 per cent. of alcohol by volume, 18·50 gallons of proof spirits being used, stated in proof gallons:

Experiment.	1	3	5
Middle (drinkable) portion of distillate	8·44	10·20	10·50
First (rejected) portion of distillate	2·34	2·28	2·52
Last (rejected) portion of distillate	3·19	1·38	·71
Loss by treatment	4·15	4·64	4·97

CONCLUSION.

From the results of these experiments I am led to the conclusion that a 10 per cent. methylated spirit can be so purified, at a moderate cost for materials and apparatus, that the great majority of purchasers would fail to detect the slight odor or taste of the methyl alcohol in the treated and distilled product, and would find it still more difficult in the artificial liquors.

The mere mechanical filtration over bone black so deodorizes and decolorizes the methylated alcohol that a sufficiently prolonged treatment gives a filtrate that is nearly free from the smell or taste of the wood naphtha. On subjecting such a filtrate to the action of freshly burnt quicklime and again filtering over bone black and then distilling, a product is obtained that has but the faintest taste of the methyl. Probably if the middle portion of such a distillate was diluted with about 40 per cent of its volume of water, filtered over bone black and redistilled, a product would be obtained that would compare favorably with most cologne spirits.

The time at my disposal has not been sufficient to allow of carrying out modifications which have suggested themselves as the experiments progressed, especially where all the different distillates have been saved and measured in working quantitatively. No doubt filtration of the different distillates over bone black would further improve them, i. e., render them more nearly tasteless.

From the middle portions of all these distillates artificial Bourbon whiskies have been prepared. A Bourbon whisky used by rectifiers for blending was procured from the collector at Lexington, Ky. The alcohols were first diluted with water until they had the same specific gravity as the whisky, viz., 0·9315 at 60° F. The diluted alcohol was then mixed with one-third its volume of whisky. Being so recently made, these samples have a decidedly "raw" smell and taste.

From the middle portion of the distillate of the fifth experiment an artificial brandy and a rye whisky have been made in the same manner as the Bourbon, viz., by dilution to the same alcoholic strength and mixture in the proportion of two-thirds alcohol to one-third liquor. The cognac brandy and rye whisky being old and of a delicate flavor, the artificial samples allow of the more accurate judging whether the alcohol imparts any disagreeable taste or smell.

COST OF TREATMENT.

Fifty dollars would be a very liberal estimate for the total cost of plant required for treating 10 gallons of methylated alcohol at one time.

A 10-gallon still, made of heavily-tinned copper, with columu head and set of diaphragms, with block-tin condenser	$30 00
A Fletcher solid flame gas-burner, consuming 35 cubic feet of gas per hour, cost	2 00
(A kerosene or ordinary coal stove may be used, instead of gas, at less expense.)	
Three stoneware filtering cylinders of 7½ gallons capacity, 34 inches high, 8½ inches wide, cost $3 75 each	11 25
Four tin funnels, 1 gallon capacity, cost 30 cents each	1 20
Four tin cans, 5 gallons capacity, cost 33 cents each	1 32
Outfit of measures, United States standard	1 00
Thermometer	75
Filter paper and rubber tubing	2 00

This estimate is evidently higher than ordinary practice would call for, being more suitable for the requirement of laboratory work.

On the basis of the results obtained in the fifth experiment, the treatment there indicated being pursued on 10 gallons of methpilated alcohol at one time, the cost based on the actual retail price paid for the materials and $50 for plant, and the profit may be stated as follows:

9 gallons of ethyl alcohol, 95 per cent. $2 40—1 70, present tax, equals 70 cents per gallon	$6 30
1 gallon wood naphtha, methyl alcohol	1 35
10 pounds bone-black granular, 8 cents per pound	80
1 ounce permanganate of potash, 8 cents per ounce	08
2 pounds quicklime; 1 cent per pound	02
Cost of 35 cubic feet of gas, for 6 hours, at $1 25 per thousand	26
1 per cent. cost of plant	50
Total	9 31
Would yield:—	
3 proof-gallons methylated alcohol at 50 cents	1 50
10·5 proof-gallons demethylated alcohol at $1	10 50
	12 00
Profit	2 69

This profit would be further increased by the additional amount of methylated alcohol recovered from the saturated bone-black by distillation. The bone-black can be recharred and used over again, as is done in sugar refineries.

Wood charcoal may be used instead of bone-black, at a less cost for material, but in this case the filtration would have to be done under considerable pressure, as the finely-ground charcoal clogs the filter so as to make filtration under atmospheric pressure exceedingly slow and nearly impossible if the layer of charcoal is of any considerable thickness. Besides, the charcoal contains resins and other extractive organic matters which the alcohol dissolves in passing through it and imparts a decided taste to the filtrate. Bone black, on the other hand, contains less organic matter, and so yields a more nearly tasteless product.

LIST OF EXHIBITS.

Accompanying this report are the following samples:

	Per cent alcohol by volume.
1. Commercial 95 per cent ethyl alcohol, specific gravity ·823, at 62 deg. F., equals ·8224, at 60 deg. F	93·40
2. Commercial methyl alcohol, wood naphtha, specific gravity ·841, at 61 deg. F., equals ·8407, at 60 deg. F	87·85
3. Methylated alcohol 90 per cent ethyl + 10 per cent methyl alcohols, specific gravity ·825, at 62 deg. F., equals ·8244 at 60 deg. F	92·75
First experiment.	
4. No. 3. Filtered over boneblack, specific gravity ·825, at 62 deg. F. equals ·8244, at 60 deg. F	92·75
4a 1. No. 4. First portion of distillate, specific gravity ·823, at 63 deg. F. equals ·8221, at 60 deg. F	93·45
4a 2. No. 4. First portion of distillate, last; specific gravity ·823, at 63 deg. F. equals ·8221, at 60 deg. F	93·45
4b 1. No. 4. Middle portion of distillate, first; specific gravity ·823, at 65 deg. F. equals ·8215, at 60 deg. F	93·60
4b 2. No. 4. Middle portion of distillate; specific gravity ·825, at 64 deg. F. equals ·8238, at 60 deg. F	92·95
4b 3. No. 4. Middle portion of distillate, last; specific gravity ·827, at 65 deg. F. equals ·8255, at 60 deg. F	92·45
4c 1. No. 4. Last portion of distillate, first; specific gravity ·830, at 65 deg. F. equals ·8285, at 60 deg. F	91·55
4c 2. No. 4. Last portion of distillate, last; specific gravity ·838, at 66 deg. F. equals ·8305, at 60 deg. F	89·15
Second experiment.	
5A. No. 3. Treated with 2·5 per cent caustic lime for twenty-four hours and filtered through paper, specific gravity ·823, at 65 deg. F. equals ·8215, at 60 deg. F	93·60
5. No. 3. Treated with 2·5 per cent caustic lime and filtered over bone black, then with ·1 per cent permanganate of potash for twenty-four hours, filtered through paper and boneblack, specific gravity ·820, at 66 deg. F. equals ·8272, at 60 deg. F	91·95
5a. No. 5. First portion of distillate, specific gravity ·828, at 62 deg. F. equals ·8274, at 60 deg. F	91·90
5b. No. 5. Middle portion of distillate, specific gravity ·832, at 62 deg. F. equals ·8314, at 60 deg. F	90·75
5c. No. 5. Last portion of distillate, specific gravity ·848, at 62 deg. F. equals ·8474, at 60 deg. F	85·75
Third Experiment.	
6. No. 3. Treated with 2·5 per cent caustic lime for twenty-four hours, filtered over bone black, then with ·2 per cent permanganate of potash, and filtered over bone black and distilled.	
6a. No. 6. First portion of distillate, specific gravity ·831, at 62 deg. F. equals ·8304, at 60 deg. F	91·00
6b 1. No. 6. Middle portion of distillate, specific gravity ·837, at 61 deg. F. equals ·8367, at 60 deg. F	89·10
6b 2. No. 6. Middle portion of distillate, last; specific gravity ·844, at 61 deg. F. equals ·8437, at 60 deg. F	86·90
6c 1. No. 6. Last portion of distillate, specific gravity ·850, at 63 deg. F., equals ·8491, at 60 deg. F	85·10
6c 2. No. 6. Contents of still, specific gravity, 993, at 62 deg. F., equals ·9324, at 60 deg. F	51·00
Fourth Experiment.	
7. No. 3, Treated with 2·5 per cent. caustic soda lime for twenty-four hours, filtered, diluted with 40 per cent. water filtered over bone-black, treated with 1 per cent. permanganate of potash, and filtered over bone black, specific gravity, ·827 at 63 deg. F., equals ·8261 at 60 deg. F	89·30
7a. No. 7. First portion of distillate, specific gravity ·854 at 61 deg. F., equals ·8537 at 60 deg. F	83·60
7b. 1. No. 7. Middle portion of distillate, first; spec fic gravity ·862 at 61 deg. F., equals ·8537 at 60 deg. F	83·60
7b. 1. No. 7. Middle portion of distillate, first; specific gravity ·863 at 61 deg. F., equals ·8617 at 60 deg. F	80·75
7b. 2. No. 7. Middle portion of distillate, specific gravity ·856 at 64 deg. F. equals ·8548 at 60 deg. F	83·20
7b. 3. No. 7. Middle portion of distillate, last; specific gravity ·870 at 60 deg. F., equals ·8700 at 60 deg. F	77·70
7c. No. 7. Contents of still, specific gravity ·975 at 65 deg. F., equals ·9735 at 60 deg. F	22·45
Fifth experiment.	
8. No. 3. Filtered over boneblack, treated with 2·5 per cent. caustic lime for forty-eight hours, filtered through paper and boneblack, treated with ·2 per cent. permanganate of potash, filtered over paper and boneblack, specific gravity ·834, at 60 deg. F. equals ·8340, at 60 deg. F	89·95
8a. 1. No. 8. First portion of distillate, specific gravity ·827 at 64 deg. F. equals ·8258 at 60 deg. F	92·35
8a. 2. No. 8. First portion of distillate, middle; specific gravity ·827 at 64 deg. F. equals ·8258 at 60 deg. F	92·35
8a. 3. No. 8. First portion of distillate, last; speeific gravity ·828 at 63 deg. F. equals ·8271 at 60 deg. F	91·95
8b. 1. No. 8. Middle portion of distillate, first; specific gravity ·828 at 64 deg. F. equals ·8268 at 60 deg. F	92·05
8b. 2. No. 8. Middle portion of distillate, second; specific gravity ·830 at 65 deg. F. equals ·8285 at 60 deg. F	91·55
8b. 3. No. 8. Middle portion of distillate, third; specific gravity ·831 at 65 deg. F. equals ·8295 at 60 deg. F	91·30
8b. 4. No. 8. Middle portion of distillate, fourth; specific gravity ·834 at 63 deg. F. equals ·8331 at 60 deg. F	90·20
8b. 5. No. 8. Middle portion of distillate, fifth; specific gravity ·836 at 65 deg. F. equals ·8345, at 60 deg. F	89·75
8b. 6. No. 8. Middle portion of distillate, sixth; specific gravity ·838 at 65 deg. F. equals ·8365, at 60 deg. F	89·15

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(Notices Continued on page 20.)

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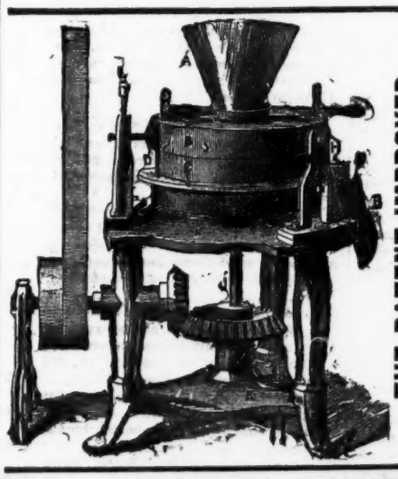

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6b. 7. No 8. Middle portion of distillate, last; specific gravity ·842 at 65 deg. F. equals ·8405, at 60 deg. F..... ..... 87·90

8c. No. 8. Last portion of distillate, specific gravity ·85) at 64 deg. F. equals ·8488, at 60 deg. F..... ..... 85·25

Artificial Liquors.

Bourbon whisky, marked T, W, X, Y and Z.
Rye whisky, marked R.
Cognac brandy, marked 8.

The ethyl alcohol used in these experiments would not pass the four principal tests called for by the Pharmacopœia, viz., with sulphuric acid, with caustic potash, with permanganate of potash, and with nitrate of silver, and it is very doubtful if any commercial alcohol would, because unobjectionable and unavoidable organic matter is absorbed from the barrels and the dust of refineries, etc. These tests are complementary and are directed to organic matters that are readily reduced by these reagents.

On applying these reagents to the middle distillates of the last experiment they were found to compare favorably with some redistilled cologne spirits taken for comparison.

The best test is undoubtedly that of excessive dilution with water and noting the odor and taste. This simple treatment seems to intensify the odor and taste of the impurity such as methyl or fusel oil.

WASHINGTON, Sept. 15, 1888.

The necessary permission to publish having been obtained, the following letter from the Assistant Commissioner of Inland Revenue, of Ottawa, Canada, on the use of methylated alcohol, is herewith submitted for your consideration:

DEPARTMENT OF INLAND REVENUE,
OTTAWA, Oct. 25, 1888.

Dear Sir—I beg to acknowledge the receipt of your communication of the 23d inst., calling my attention to the fact that the statement promised in my letter of the 19th ult. had not been received. I certainly owe you an apology for the delay, and I now beg to express my regret at not being able to comply with your wishes at an earliee date, but owing to the absence of the Commissioner in British Columbia and the Northwest, my time has been so fully occupied that the matter escaped my notice.

I will now, however, endeavor to give you as much information as possible on the subject you wrote about, viz., demethylated alcohol.

I will first inform you that the Department permitted, for many years, the manufacture in bond of methylated spirits, the ingredients used being wood naphtha and grain alcohol in the following proportions, viz., 12 gallons of wood naphtha to 100 gallons of grain alcohol not less than 60. O. P. by Syke's hydrometer. The alcohol was used in bond (free of duty), and the mixing was conducted under the supervision of an officer of this Department, and the methylated spirits produced paid an Excise duty of 15 cents per proof gallon.

The Department was subsequently awakened to the fact that this methylated spirits was capable of being demethylated and rendered potable, thus causing a serious loss to the revenue of the country.

The Department feeling satisfied, from the fact that alcohol vaporizes at from 175° to 180° F., and wood naphtha at about 144°, that demethylization was possible, repealed the provisions of the law permitting the manufacture of methylated spirits in bond, and undertook to supply the trade with a substitute therefor. This substitute is composed of a methylated spirit consisting of 25 per cent. of wood naphtha and 75 per cent. of grain alcohol, which is supplied only to varnish manufacturers and other persons engaged in the mechanical arts. The persons using this grade of methylated spirits give bonds in the sum of $2,000 that such spirits shall be used solely for the purposes mentioned, and in the premises described, in their application. An inferior grade, consisting of equal parts of wood naphtha and grain alcohol, is supplied the trade without any restriction as to its use.

Dr. Squibb, of Brooklyn, informed me in January last that from his own experience it was quite possible to free this methylated spirit from methyl: and make it quite clean and sweet and fit for potable purposes. This could be done, he asserted, by means of distillation, using a column, instead of an ordinary, still. He stated that the cost of demethylating was very trifling. I would suggest that you consult that gentleman, as the opinion of so eminent a chemist is of the greatest value.

I am not aware that Mr. Macfarlane has made any experiments as to demethylating alcohol, but will refer your letter to him in order that he may communicate with you on the subject.

That the spirits can be demethylated is beyond doubt, and that it has been used for potable purposes in this country is clearly evident, and further, that in many instances it has been used in the preparation of medical prescriptions, which must be injurious to those using such medicines.

I note your kind offer to send me a report of the result of your experiments on demethylating alcohol, and shall be grateful to you for doing so.

Mr. Macfarlane will be home in a week or ten days, when your letter will be handed him.

I remain, dear sir, yours respectfully,
W. J. GERALD,
Assistant Commissioner.

HON. EDGAR RICHARDS,
Microscopist, Office of Internal Revenue,
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Pratt's Deodorized Stove Gasolene.

DEALERS in Gasolene Stoves are aware of the importance of having a pure and reliable article of gasolene to supply to their customers. As ordinarily prepared by refiners, Deodorized 74° Gasolene fails to give entire satisfaction, from its liability to gum and clog the burners. Wherever this occurs, endless annoyance ensues, and dissatisfaction with the stoves is the inevitable result. All this may be avoided by the use of **Pratt's Deodorized Stove Gasolene,** which is refined with the greatest care to insure absolute purity, and with due regard to the requirements of these stoves. Dealers can furnish this to their customers with the confidence that it will give perfect satisfaction. We guarantee that it will neither clog the burners nor emit any offensive odor.

At the request of many prominent manufacturers of these stoves, who were desirous that their patrons should know where to obtain the best article of gasolene, we take this means of informing the trade that we will furnish **Pratt's Deodorized Stove Gasolene** in any desired quantity, and packed either in barrels, half barrels, or in five-gallon cans and cases.

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SOLE PROPRIETORS AND REFINERS OF PRATT'S ASTRAL OIL.

Pennsylvania White Lead Co.,

ESTABLISHED 1844. INCORPORATED 1887.

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FAHNESTOCK HASLETT & SCHWARTZ STRICTLY PURE WHITE LEAD PITTSBURGH, Pa.

ORIGINALLY ESTAB. B. A. FAHNESTOCK 1844 TRADE MARK REGISTERED 1873

Each package of the original B. A. FAHNESTOCK LEAD now bears a gilt tablet of which the above is a fac simile.

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CARTER WHITE LEAD CO., OMAHA, NEB.

CARTER WHITE LEAD CO. STRICTLY PURE DIAMOND BRAND TRADE MARK WHITE LEAD OMAHA, NEB.

$100 FORFEIT

IF THE CARTER WHITE LEAD DOES NOT COVER ONE-THIRD MORE SURFACE THAN ANY OTHER WHITE LEAD IN THE MARKET.

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We take pleasure in informing you that we have opened an office and warehouse in New York City, at No. 5 Dutch Street, between Fulton and John Streets, where we shall carry a full stock of White Lead. This step has been necessitated by the increasing demand for our product by the trade in the South and East, requiring facilities for securing our Lead more promptly than it was possible for us to deliver it from Omaha. We request our friends in the Atlantic Coast States to send their orders in future to this office, where they will have prompt attention.

Prices and terms will be gladly given on application, also will send a small sample keg to parties desiring to make a test in a practical manner.

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Red Lead, Powdered and Flake Litharge, and Glass-House Lead.

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Refined Glass-House Lead

Especially adapted for the manufacture of the FINEST QUALITIES OF GLASS, and we guarantee its UNIFORMITY.

LINSEED OIL,

RAW, BOILED AND REFINED.

Also a Superior Grade especially adapted for Varnish Makers' use.

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SINGLE WATER COOL MILL.

CHARLES ROSS, Jr.,

31 & 33 South Fifth Street, Brooklyn, E. D., N. Y.

Write for Particulars.

PAINT MARKET.

Note—Our prices are for large lots except when otherwise specified, and buyers of small quantities must expect to pay an advance on these figures.

The prices current will be found on page 49.

TUESDAY EVENING, Dec. 15, 1888.

White Lead, Zinc, Etc.

The pigiead market has displayed no particularly interesting features. The demand from consumers is hardly more than retail in character while speculative interest appears to be dormant. There being no pressure to sell in any quarter the market has a fairly steady tone, 3 70c being the quotation for spot lead. The closing quotations on 'change, Saturday were as follows, the first figures representing the prices bid and the second those asked; Spot 3 70@3 85c, Dec. 3 72½@3 87½c, Jan. 3 75@3 90c, Feb. 3 77½@3 92½c, March 3 85@3 95c, April 3 50@4c. There was no call on Monday, it being observed as a holiday.

White lead has remained very quiet during the past week, buyers showing little disposition to contract for forward delivery, while the demand for stock to supply current wants, has been as usual at this time of the year, very light. There has been no change in the association quotations or discounts. They are as follows: In lots of less than 500 lbs, 7¼c net; in lots of 500 lbs or more, 7c per lb. Terms—On lots of 500 lbs and over, 60 days, or 2½% discount for cash if paid within fifteen days of invoice date. A rebate of ½c per lb will be allowed on purchases of 500 lbs or more, if paid within 60 days of invoice date. To buyers of a total of ten tons of pure lead during the year, counting all brands, an extra rebate of ¼c per lb will be paid, payable July 1st and December 31st, provided deliveries have been made of such quantity prior to each of those dates.

American oxide of zinc has continued in moderate demand, with quotations unchanged and the market steady, as follows: 4½@4¾c, according to quality. French zincs are unchanged from last week, and continue to rule at 6¼c for dry Antwerp red seal in bbls of 200½ lbs; Paris red seal 6¾c, and 7¼c for Paris green seal. Discounts on French are as follows: To buyers of 10-bbl lots of one or assorted grades 1 %, 25 bbls 2% and 50 bbls 4 %. No discount is allowed on less than 10-bbl lots, and discounts include brokerage.

Dry Colors.

REDS.

There has been a continued absence of special features to the trading, in the market for the several pigments. Prices in the absence of important business have been unaltered. English Venetian Reds have been in moderate request in a jobbing way, but no features can be noted. For special brands, in large lots, the quotations continue at $1 45@1 50, with other grades, in less quantities, ruling at $1 35@1 45.

American kinds have not been active, the current business being of small proportions and uninteresting. Prices are ruling unchanged at 90c@$1 05 for ordinary grades, while some special brands continue to be held at $1 50@1 25, as to make and size of order.

Cobalt Oxide—Black is quoted at $2 60 and prepared at $2 90, with the market steady in tone, but rather quiet as regards trading.

Orange Mineral—"Small stock, with a nominal demand prevailing," would fitly describe the position of the market for the several makes. No items of interest can be noted, while prices are unchanged at 8¾@9½c for German, English at 8¾@9½c, and French at 9@9½c. Domestics have continued to sell in a moderate way at our previous quotations of 8@8¼c, according to quantity.

Carmine is without feature. A moderate jobbing demand has prevailed, the same being satisfied by dealers, without comment. Prices are identical with a week ago, being quoted at $3 10 in bulk, $3 20 in boxes or bottles, and $4 20 in oz bottles.

Quicksilver Vermilion—Stocks have moved to a moderate degree and entirely in a jobbing way, while the market continues devoid of interesting items. Values are unchanged, and rule as follows: 60c per pound for 100-lb kegs or over, and 61c for kegs of 30 or 50 lbs.

Red Lead and Litharge have sold in the regular way for consumption, but no speculative trading has been indulged in. Quotations continue as follows: 6¾c for red lead in casks and barrels and 7c for smaller lots, subject to a rebate of ½c for cash, 60 days, and an additional 2½% for cash, 15 days. For litharge 6½c is quoted.

BLUES.

The market for blue pigments has been particularly bare of items of interest during the past week. Buyers have simply taken sufficient stock to carry them over the year, and their wants have been small. The market has ruled steady, no break being noticeable; in fact, the tendency is the other way, and with the advent of improved trading prices will undoubtedly be put on a higher basis. Following are the quotations: 25@30c for Prussian blues, according to quality, etc., while the asking figures for Chinese are 48½@50c. The other blues are at our previous rates.

GREENS.

Quiet reigns supreme, in the market for green pigments. The movement has been in a small way only, and has not taken up the time of dealers to any extent. Prices are stationery. There has been a diminished demand for Paris for next season's delivery, and but few contracts have been consummated.

Miscellaneous.

Sulphate of Barytes.—A small jobbing trade has been consummated since we last wrote but no important business can be reported. The market is featureless, with value quoted at $21 50 for special brands of imported. Best No. 1 at $17 50@18 50, as to quantity; best off color grades at $15; No. 2 at $14, and No. 3 at $12. The market has ruled steady at these figures.

Chalk—The offer of $2 75, reported in our last, has not as yet been accepted, but notwithstanding this fact, dealers here have cabled even lower offers than the above, which of course, have met with no response. Some trading in steamer lots has been accomplished, but we can learn of no sailer lots offering. Nominally, prices are quoted at $2 90@3 00.

China clay.—The market is rather quiet on all grades. The higher qualities are scarce but as there is no special demand, at the moment, this fact has not attracted special attention. Medium grades are in full supply with a light inquiry. The lower kinds are available in sufficient quantities to supply all demands, while prices are ruling at the following rates: $13 50 for low grades, $16 for medium, and $18 for high grades, which figures are identical with a week ago.

Talc—There is a good stock of all grades of American now on hand, while French is in

THE JEWETT WHITE LEAD CO.,
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LINSEED OIL,
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LINSEED CAKE.
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CORRODERS AND MANUFACTURERS OF
WHITE LEAD,
ESTABLISHED 1867. DRY AND IN OIL.
Red Lead, Litharge & Orange Mineral
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Established 1772.
We are prepared to supply the Trade promptly, with our long established and reliable brand of
Pure White Lead
IN OIL,
unsurpassed for whiteness, fineness and body.
ALSO
Painters' Colors
Orange Mineral,
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Oxides
FOR
Varnish Maker and others
Requiring Pure Goods A SPECIALTY.
LINSEED OIL,
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RED LEAD, LITHARGE.
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DROP BLACK
FINEST GROUND
Article ever offered to the Trade.
Reduces cost of grinding in Oil or Japan to one-half or one-third.
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PAINTS FOR GRINDERS' USE.
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TAKE NOTICE.

That the names **"Refined,"** and **"Floated,"** and **"Cream Floated,"** by which the Trade identifies certain articles of commerce, are our registered **Trade-Marks.** The Director of the United States Geological Survey and Chief of Division of Mining Statistics, in the latest Official Report, issued at Washington, D. C., 1885, on page 922, under head of Minneral Paints, after reporting that American Barytes is softer and better than the foreign, and that the State of Missouri ranks first in the production of the American ore, continues the Report in the following words and commas, namely:—

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Having invented the processes of manufacture which have made the said articles so popular, and having introduced and popularized them under the names aforesaid, and having for many years publicly advertised these facts, we have *lawful property* in said names. And on any goods, invoice, or quotation but ours, they are a *prima facie* fraud.

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OF ALL GRADES,

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Patent Hydro-Carbon Gas Black.

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RED LEAD AND LITHARGE.

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IN PATENT COLLAPSABLE TUBES.

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"Economy" Ready Mixed Paints,

QUICK DRYING CARRIAGE PAINTS,

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For manufacture of durable and brillian I Varnishes, Japan, Enamel, &c.

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CARBON GAS BLACK

MADE UNDER LETTERS PAT. OF SEPT. 1872, MAR. 1875, MAY 1881.

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PAINT YOUR BUGGY FOR

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—WITH—

DETROIT WHITE LEAD WORKS

CARRIAGE BLACK.

If you wis. your gear in color, use our WINE COLOR, VERMILION, YELLOW or GREEN.

The original and best Ready-Mixed, Varnish Gloss,

CARRIAGE PAINTS.

Four Years Uninterrupted Success and not a Single Complaint

COLORS FOR GRINDERS AND MANUFACTURERS.

LOW PRICES.

JOHN LUCAS & CO.,

Philadelphia: 141 & 142 N. 4th St. 322 to 330 Race St.

BEST QUALITY

WM. F. LUCAS 89 Maiden Lane New Y

moderate supply on spot, but with plenty on the way. Prices are unchanged and there is no demand of any moment existing. The following rule: 1¼@1¾c for French and ⅝@1¼c for American as to quantity and quality.

Terra Alba—The higher grades of American and French continue exceedingly scarce on spot, and what little there is here is in third hands and is held at a fancy price. Common grades are plentiful but find little outlet at the moment except in a small jobbing way. The following are quoted: French at 85@95c per 100 lbs, No. 1 American 80@85c and No. 2 60@65c.

Whiting—We are informed that a contract has been consummated, since our last for 8,000 bbls common on private terms but the price is said to be in the neighborhood of 50c. Quite some inquiry has been noted for common, but there is, as yet, no surplus stocks. Gilders is in better supply, with a fair average demand prevailing. Quotations are as follows: common 55@60c, and gilders 70@75c.

Glues.

There have been few transactions in the market for glues, and on every hand are evidences of the holiday season. Prices have been stationary and are expected to remain so until the new year has set in.

Glass.

WINDOW GLASS.

Dealers report a very quiet market for French window glass, but they are not disappointed with the condition of trade as they expect a lack of orders during the closing days of the year. Prices are maintained, the discount on both single and double being 75 and 10. A rebate of 5% is allowed on purchases and deliveries, within a calender month, of 20 boxes and over, whether the purchases were made of one or more dealers. The demand as usual at this season of the year has fallen off but there is still a very fair business in progress for December.

The demand for American window glass is slow as usual at this time of the year. Prices are still unsettled but there has been no further quotable change 80 and 5% representing the discount generally allowed. Reports from Cincinnati deny that the western manufacturers took any action, at the meeting held there last Thursday, regarding the organizing of a pool. A more detailed reference to the meeting will be found in our news columns elsewhere in this issue.

A charter has been granted to the Dunbar Sand Company, of Pittsburg, and they will mine and prepare glass sand at Dunbar, Pa. The capital stock is $100,000 and the incorporators are Abner Scott, of Greensburg; C. M. King, James Atwell and Caleb Jackson, of Allegheny, and Elmer White, of Pittsburg.

Pumice Stone.

This is a volcanic product, and is obtained principally from Campo Bianco, one of the Lipan islands, which is entirely composed of this substance. It is extensively employed in various branches of the arts, and particularly in the state of powder, for polishing the various articles of cut glass; it is extensively used in dressing leather, and in grinding and polishing the surface of metallic plates, etc. Pumice stone is ground or crushed under a runner and sifted, and in this state it is used for brass and other metal works, and also for japanned, varnished and painted goods, for which latter purpose it is generally applied on woollen cloths with water. Putty powder is the pulverized oxide of tin, or generally of tin and lead mixed in various proportions. The process of manufacture is alike in all cases—the metal is oxidized in an iron muffle, or a rectangular box, close on all sides, except a square hole in the front side. The retort is surrounded by fire, and kept at a red heat, so that its contents are partially ignited, and they are continually stirred to expose fresh portions to the heated air; the process is complete when the fluid metal entirely disappears, and the upper part of the oxide then produced sparkles somewhat like particles of incandescent charcoal. The oxide is then removed with ladles, and spread over the bottom of large iron cooling pans and allowed to cool. The lumps of oxide, which are as hard as marble, are then selected from the mass and ground dry under the runner; the putty powder is afterwards carefully sifted through lawn.—*Ex.*

Paints and Japans.

The following contribution is from a well known master car painter, and was read at a public meeting recently of the craft.

The subject for consideration is one which at first seems to require very little thought, but when we begin to look into it more closely we find that it is of much more importance than at first supposed. We are met at the outset with a vast number of metallic paints, some of which have good drying qualities, while others have none. It would, therefore, be almost or quite impossible to give a formula that would meet all the demands of the times. Then, again, the different seasons and climates would have to be provided for. In doing this we must not lose sight of three essential points

RUTHERFORD'S

METALLIC BROWN.

Guaranteed the Best Paint in the market for

TIN, IRON AND WOOD

Contains No Grit.

Unequalled in Fineness.

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Grinds smoothly with 18 lbs. oil to 100 lbs. oxide.

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Our Trade Mark

We deny the following misstatements contained in the special notice of the Prince M'f'g. Co., under date of Dec. 12th, 1888.

1st. We deny that Rutherford & Barclay have ever offered their good for sale under any other brand than their own.

2nd. We deny that Rutherford & Barclay are a corporation or that they have ever formed any corporation.

3rd. We deny that any one has ever obtained, or attempted to obtain, or ever could obtain, an injunction against us in any of our transactions.

Any disputes which the Prince M'f'g. Co. may have concerning the trade mark which designates their goods can in no wise affect us.

RUTHERFORD & BARCLAY, 77 Maiden Lane, New York.

RICKARD & HEWITT,

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ORIENTAL VERMILION,
PERSIAN RED,
IMP'D AMERICAN VERMILION
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VERMILION OF LOWER QUALITIES,
CHROME YELLOW, all qualities.
FRENCH STANDARD GREENS, all shades.
CHROME GREEN, all shades,
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THE particular attention of paint and varnish manufacturers and users of these articles is directed to a very useful book entitled "*Painting and Painters Materials*" by Charles L. Condit, which treats of Oils, Pigments, Varnishes, Driers, etc., in a thorough manner. This is the only book treating these subjects upon the basis of scientific investigations made in Holland, Germany and France. Send $2.25 to this office and we will mail a copy at once.

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in the painting of railroad freight equipment, viz., economy, durability and the shortest possible time. How to combine these points in one is what we must endeavor to do, and if we succeed in showing any improvement over the usual method of mixing and applying oil paints it will be a step forward in our branch of the trade. At the same time, it is not expected, or do we believe, that every one will think as we do without making a practical test. We will therefore proceed at once to the subject and ascertain what constitutes a reliable metallic and oil paint. First, it should possess good covering qualities, spread well under the brush, and dry within a given time; and when dry be less elastic than the color which is used for lettering, etc. This cannot be obtained when boiled linseed oil is used exclusively in mixing the ground or body coats. This evil we will have to remedy, or else we will continue to see all our stencil work, where white lead is used, crack prematurely. How, then, shall we mix our metallic paint in order to obtain the best possible results is what we will here endeavor to show, using the following formula for the liquid:

Pure boiled linseed oil	60
Pure raw linseed oil	20
Spirits of turpentine	5
Good coach japan	10

Mixing 8 lbs. of dry metallic paint to each gallon of the above, which will give us a mixed paint that will weigh 12 lbs. to the gallon, and cover with one coat 32 square yards of new beaded surface. Reducing this to 1 square yard, we find that it will take 6 oz., or 1 gill, for the first coat. For the second coat 4 oz., or two-thirds of a gill, per yard, the third coat being in about the same proportion as the second. Old painted surfaces will require more, and vary according to the condition of the surface to be painted. The above estimates will be found as nearly correct as accurate weighing, measuring, and careful applying will show. The addition of raw linseed oil and turpentine makes a more durable paint, which will dry without the heavy tack found so objectionable in paints where boiled oil is used exclusively.

Another paper upon the same subject was read as follows:

It is generally admitted that scarcely two samples of Japan of different manufacture will give like results as to drying and binding qualities. Why should there be such a variation, and can we not have a standard of specifications as to drying and binding? In what way shall such a standard for japan be determined? Having been assigned the above subject, I am forced to say at the outset that often and often have I been like a mariner at sea without rudder or compass by and through the action of japan in my mixed paints; and I do, therefore, most heartily fall in with the proposition set forth by our worthy president and advisory committee as being most opportune. As it has been kindly suggested, I have endeavored to make some tests as to the drying qualities of four japans which are almost in constant use by our company. Not wishing to occupy too much valuable time, I will proceed to give my findings in brief in a temperature of 120°. For convenience I have classified the japans under numbers.

The first test with No. 1 japan, 2 parts oil to 1 part japan, consumed one hour and thirty-five minutes in drying. The last, or 20 parts oil to 1 part of the same japan, to dry consumed nine and a half hours. I think I have secured a fine average in the following tests of our No. 1 japan: 7, 8, 9 and 10 parts oils to 1 part japan have almost tallied the same time—four hours in drying. In the tests made with our Nos. 2 and 3 japans the results in time for drying were most alike. Beginning with 2 parts oil to 1 of japan, consumed two hours and twenty minutes; and 20 parts oil to 1 of japan, to dry consumed four hours. No. 4 japan.—In the test of this article I met with a genuine surprise in the 2 and 3 parts oil to 1 of japan. I found that in the process of drying the respective liquids disunited, and they, like many of the human family, would have neither lot or part in the solution of the problem to make life more cheerful. In the 4 parts oil to 1 part of this same japan the time for drying was three hours and forty-five minutes. From this to the twelfth-part oil test the time gradually lessened to two hours and fifteen minutes, and then increased proportionately to the twenty-part oil test, which consumed four hours.

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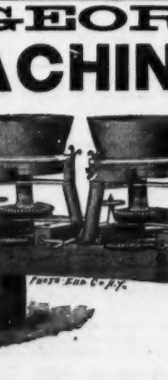

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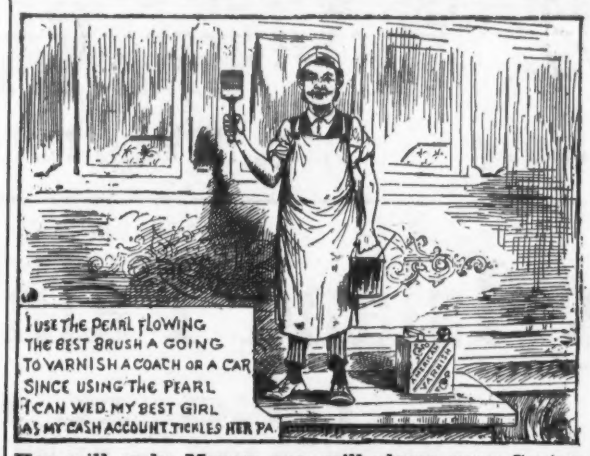
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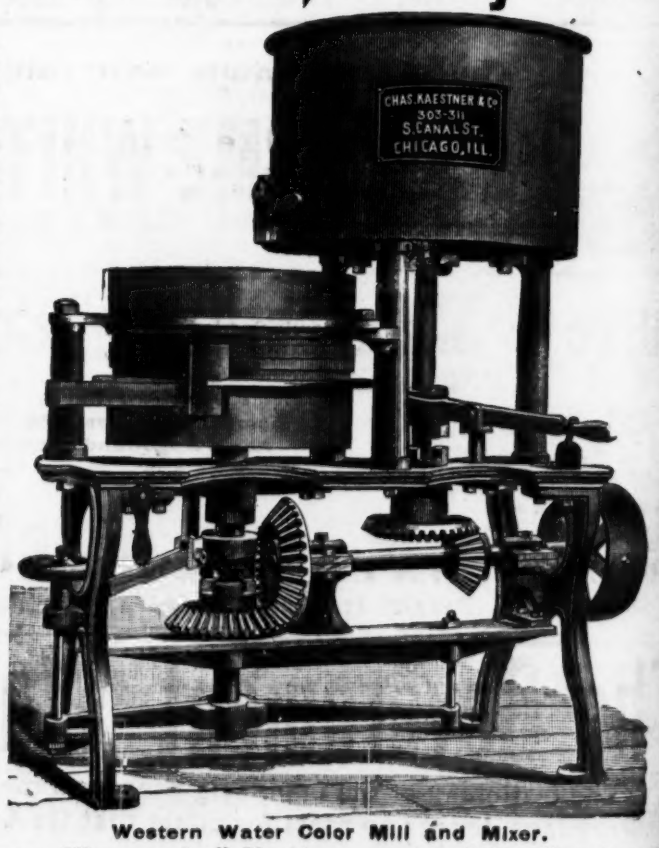

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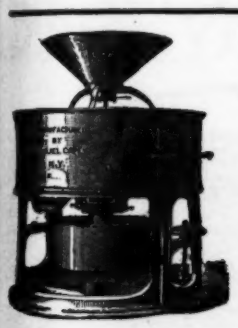

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We Will Buy Good Second-Hand Carbon Oil and Naphtha Barrels.

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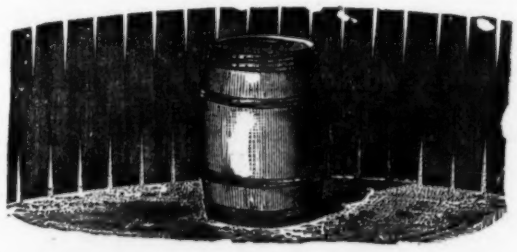

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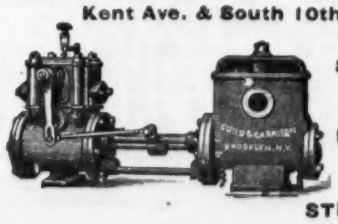

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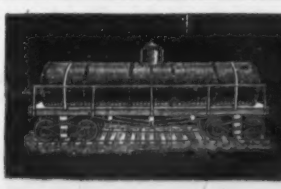

WM. B. POLLOCK & CO.
MANUFACTURERS OF
OIL TANK CARS, OIL TANKS
AND
STEAM BOILERS
YOUNGSTOWN, OHIO.

OIL MARKET.

Note—*Our prices are for large lots except when otherwise specified, and buyers of small quantities must expect to pay an advance on these figures.*

The prices current will be found on page 49.

Vegetable Oils.

TUESDAY EVENING, Dec. 25, 1888.

The linseed oil market has several features of interest which are unusual at this season of the year. The price of seed continues upward, and one faction in Chicago has advanced oil to 57c, while the parties who have been made conspicuous by their cheap offerings of oil are said to be buying Calcutta seed. We were informed to-day that 20,000 bushels of foreign seed had actually been placed in Chicago within a few days, and that the total contracts made with the same source abroad for delivery in different cities aggregate 100,000 bushels. City oil is held at the usual price of 54c, and Western on spot at 56c. The latter is in very limited supply.

Cotton oil is about stationary at 46@47c for prime crude, 54@55c for summer yellow and 55c for summer white, while the winter grades are the same as quoted for several weeks. Indications point to a steady market for some months with probable changes favoring holders, owing principally to the fact that receipts of seed are not so liberal as last season, considerable seed being damaged and holders of good seed releasing supplies sparingly. As speculation has been knocked out of the New York market, it is allowed to pursue a natural course and trading in oil is confined in a large measure to producers and consumers. Jobbers as a rule carry light stocks, preferring to purchase when wanted. The changed conditions of business necessarily limits the amount of oil handled by middlemen, and gives a quiet tone to the market, as sales of round lots are not so frequent. However, there is a fair consumptive demand, sufficient at least to keep moving all the stocks which come here. Prime crude oil is a scarce article, but the wants are not important. Soap stock has sold at 2½c; very little is offering.

Exports of cottonseed oil from New York by countries

To	For week ending Dec. 24, 1888. Gls.	Since Sept. 1, 1888. Gls.	Same time last year. Gls.
Africa	..	....	....
Arg. Republic	..	101	....
Australia	..	196	262
Austria	..	....	14,797
Belgium	..	45,000	45,000
Brazil	..	2,411	100
Br West Indies	..	13,882	1,751
Br Guiana	..	520	106
Canary Islands	..	....	....
Central America	..	64	30
Chili	..	10	168
China	..	....	....
Cuba	..	149	....
Dan West Indies	453	935	1,796
Denmark	..	150	7,650
Dutch West Indies	..	....	...
Ecuador	..	....	....
Egypt	..	....	....
England	1,244	9,345	112
France	..	..	136,517
French West Indies	..	...	500
Germany	14,901	19,999	2,500
Hayti	..	3,292	725
Italy	..	....	12,400
Japan	..	....	....
Mexico	..	6,714	24
Netherlands	..	462,604	21,800
North America	..	4,423	1,568
Norway & Sweden	..	1,302	7,500
Peru	..	480	..
Pto Rico	..	48	900
Scotland	..	3,750	2,500
Spain	..	....	....
Turkey	..	....	....
U S. Columbia	..	318	1,078
Uruguay	..	..	..
Venezuela	20	674	40
Total	16,618	278,358	256,653

Exports of cottonseed oil from New Orleans by countries:

To	For week ending Dec. 21, 1888. Bbls.	Since Sept. 1, 1888. Bbls.	Same time last year. Bbls.
Austria	..	....	....
Belgium	..	....	600
England	..	....	....
France	..	1,025	600
Germany	..	300	800
Gibraltar	..	....	....
Italy	..	....	200
Netherlands	..	..	5,000
Portugal	..	..	....
Spain	..	....	..
Total	..	1,325	8,206

Exports of soap stock from New Orleans by countries:

To	For week ending Dec. 21, 1888. Bbls.	Since Sept. 1, 1888. Bbls.	Same time last year. Bbls.
Cuba	..	....	....
England	..	....	1,505
Italy	..	....	..
Mexico	..	40	....
Spain	..	....	....
Total	..	40	1,505

Ceylon cocoanut oil is on a firm basis at the former figure of 5⅝c for spot or near-by arrival, but no transactions are reported. Cochin oil is quoted at 6¼c, which is a slight advance over last week for spot supplies. Holders are disposed to strengthen their views, although the article is at present neglected by purchasers.

Olive oil is offering at 72c, with sales of 2,000 gallons Italian on spot at that figure.

Palm oil is nominally held at 6¼c for prime Lagos, with no business doing at the moment.

Animal and Fish Oils.

Lard oil is still quoted at 70c for prime city or western grades. Trade is reported light.

Elaine oil has finally been advanced to 40@43c by the manufacturers, with sales of car loads reported at 42c. Saponified red oil is said to have been sold under 48c per gallon, and that recent sales can be duplicated. As the figure is low considering the scarcity of the article, it is believed that the cheap offerings are from the Pacific coast. The present season has witnessed a marked increase in the movement of both oils named, and elaine particularly has commanded attention.

Both the sperm and whale oil markets are in a firm position. No fresh business in crude is reported

Degras and Japanese oils are still subjects of investigation at Washington. The latest information will be seen in our editorial columns.

Menhaden oil is not wanted at present, as pressers are apparently well supplied, and holders continue to ask 32@35c. Pressed grades are likely to be advanced after the turn of the year.

Oil Cake.

The situation in the oil cake market is unchanged. The holiday trade is unusually quiet and quotations are nominal. Some shippers are naming $28 as the value while others talk about $27 as representing their views, The first named figure is nearer the actual market.

Wax, Lard, Tallow, Etc.

There is a good movement of crude and refined paraffine wax, and former prices are realized. Prime crude of 120@128 melting point is held at 4½@4¾c, and 130 test at 5c, refined wax is quoted at 6c for 115 test, 6¼c for 120, 8c for 130, 9¼c for 135, 9¾c for 137, and 10¼c for 140 test.

Spermaceti is dull at previous prices of 24@25c. The export trade is not coming into the market as expected.

The lard market is inactive and uninteresting, but a change to higher values is expected next month, as a bullish movement is intimated. Western steam on spot is quoted at 8 65c, city steam at 7 85c, and refined is higher at 8 70@9 70c.

Lard stearine is slow of sale at 9@9½c, while oleo stearine is steady at 7¼c, and has a moderate demand.

Tallow has weakened slightly since last report and can now be bought at 6c but as there are no indications of business the market is nominal.

Naval Stores.

Spirits Turpentine—A dull and featureless market has prevailed since we last wrote, and sales have been of the small jobbing order. In spite of this fact, however, the market has been firm throughout the week, and prices show a slight advance over last week. With the advent of the New Year, it is currently expected that trading will again assume its normal condition. At the close to-day the market was steady at 46¼@46½c.

Rosin—A light movement must be reported in this market, in common with all business, which is attributed to the fact of its being the closing weeks of the year, which has deterred home consumers from purchasing in anything but small parcels, and high freights have prohibited any extensive export movement. The market closed quiet to-day, at unchanged figures, as follows; Strained, $1@1 02½; good strained, $1 05@1 07½; E, $1 15; F. $1 20; G, $1 25; H $1 30; I, $1 50; K, $1 60@1 65; M, $2; N, $2 40@2 45; W. G., $3; W W $3 50.

STOCK ON HAND AT

	Spirits.	Rosin.	Tar.
New York, Dec. 22...bbls	1,380	21,562	777
Savannah, Dec. 14	11,841	83,376	....
Wilmington, Dec. 22	3,111	102,553	5,370
Charleston, Dec. 14	5,629	29,879	....
London, Dec. 3	17,400	.. .	...

LONDON TURPENTINE STATISTICS.

Messrs. Watt & Son, London, under date of Dec. 8, say:

	1888.	1887.	1886.	1885.
Stock Dec. 8	15,865	16,406	24,537	44,706
Delivered this week	1,517	1,002	815	987
Since Jan. 1	60,828	65,554	67,486	52,812
Price Dec. 8	34s 6d	27s 9d	26s 6d	27s
Jan-Apl	32s 9d	28s 9d	26s 9d	26s

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Animal, Vegetable and Mineral OILS.

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Pure Spanish and Italian Olive Oils.

All grades of Pure Olive Oil Soap for Silk and Worsted Mills, either in bulk, bars or powdered.
Saponified Red and Elaine Oils.
Mineral Wool Oils and Wool Stocks.
Castor, Rape, Mustard and Cottonseed Oils
Paraffine Oils, Paraffine Wax and Beeswax.
All kinds of Lubricating and Axle Greas Tallow, Lard and Cottonseed Grease for Soap Makers.

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Pure Winter Pressed Miners' Oils, White and Yellow, the best BURNING ever prepared for Miners' use; Superior to LARD OIL and at LESS COST. Guaranteed to remain limpid at Freezing Point.

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PARAGON (TRADE MARK.) **COOKING OILS**

Purely Vegetable.

Cottonseed Oil, Cake and Meal Reginnings & Soap Stock
CORRESPONDENCE SOLICITED.

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F. W. BRODE & CO.,
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COTTONSEED PRODUCTS
Miners' Oils. Winter Yellow, Summer Yellow Summer White, & Cooking Oil.
CRUDE AND REFINED OILS,
Meal and Cake. Soap Stocks.
Correspondence Solicited. Samples sent on application

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THE CINCINNATI TRANSFER CO.,
Cincinnati, Ohio.

Mica Axle Grease is very satisfactory in every respec
Quite superior to any axle grease we have ever used before.
W. J. Winterbottom, Supt.

We endorse the above.
Griffith & Hill, Lumber Dealers.
Jas. Griffith & Sons, Planing Mill.

Springfield, Vt.
I have a large sale of Mica Axle Grease. *It wears three times as long as any I ever used.*
Minor W. Newton

Eldorado, Wis.
We have sold Mica Axle Grease for five years. *It is the best Grease manufactured.*
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I have used Mica Axle Grease for about *eight years* with the very best satisfaction. *It doesn't run off the axle in hot weather; and it doesn't chill and harden in cold weather.* I have used almost all other makes of axle grease *and consider the Mica worth more than twice as much as any other for my use.*
J. C. Carpenter, dealer in coal and wood

Manufactured by the

STANDARD OIL COMPANY,

Cleveland, Ohio.

S. P. SHOTTER & CO.

OFFER

SPIRITS TURPENTINE and ROSIN

by the CARGO or CARLOAD.

VENICE TURPENTINE,

GUM THUS, BRIGHT VARNISH, TAR OIL.

MYSTIC BRAND OIL

Gravity, 14 deg. Fire test, 375 deg. Cold test, zero.

Light Lemon Color, Odorless, Bloomless.

Free from acids, and will not gum or oxodize; used largely for compounding with Castor, Whale, Fish and Animal Oils, Paraffine and High Grade Lubricating Oils.

No. 3 Deodorized Oil,

Gravity, 11 deg. Fire test, 370 deg. Cold test, zero.

This Oil has no equal for manipulating Red Paraffine Oils, West Virginia and other cold test oils on account of its heavy body and low cold test. It is free from acids.

JAVA OIL — ***RAW AND BOILED.*** The most reliable substitute for Linseed Oil in the market. Sold for half the price. A pure vegetable oil. Free from petroleum or any of its products. Odorless, Bloomless. We ***Positively Guarantee this Oil to work in White Lead or any of the various Pigments without Curdling or Saponifying same.*** Is used largely for manipulating Linseed Oil.

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DEALERS IN ALL GRADES OF

FINE LUBRICATING AND MACHINERY **OILS** Railroad, Engine Car and Coach Oils a Specialty

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EXCELSIOR LUBRICATING CO.
J. D. BEECHER, Proprietor,
Manufacturers and Dealers in
Machinery, Engine, **OILS** Cylinder, and Car.
CHEMICALLY PURE PETROLATUM.
New Haven, - - Conn.

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10 & 12 OLD SLIP, Cor. Water St., NEW YORK.
MANUFACTURERS OF
Lard, Neatsfoot and Tallow Oils,
ALSO MANUFACTURERS OF REFINED ANIMAL OILS.

Composition of Oleomargarine and Ingredients.

FROM REPORT OF COMMISSIONER OF INTERNAL REVENUE.

Ingredients.	Specific gravity at 40° C.	Saponification equivalent.	N/10 NaOH Vol. for 2·5 gms.
Oleomargarine:			
Average, 39 samples..	·90397	286·0	0·370
Highest	·90526	291·6	0·882
Lowest	·90291	282·3	0·080
Dairy butterine:			
Average, 9 samples..	·90378	284·9	1·293
Highest	·90427	286·8	1·915
Lowest	·90350	282·2	1·002
Creamery butterine:			
Average, 7 samples...	·90519	275·9	3·467
Highest	·90750	280·4	7.577
Lowest	·90416	266·1	1·973
Oleo oil:			
Average, 13 samples..	·90216	286·2	·053
Highest	·90268	288·4	·207
Lowest	·90171	284·6	·000
Neutral lard:			
Average, 12 samples.,	·90362	286·6	·017
Highest	·90379	288·2	·208
Lowest	·90334	284·6	·000
Cottonseed oil:			
Average, 8 samples..	·91198	285.7	·089
Highest	·91403	289·1	·171
Lowest	·91082	283·3	·000

Several samples having been received of an artificial food product, composed principally of the beef stearine left after pressing out the oleo oil in the manufacture of that product and cottonseed oil, for analysis, I collected from various sources samples of cottonseed oil, both crude and refined, and some cottonseed stearine. Through the courtesy of one of the large firms in Chicago, samples of refined oil were blown for some time, and the resulting product together with the original oil was sent here for analysis. The results obtained are given in the following table:

ANALYSES OF COTTONSEED OIL.

Serial No.	Description.	Factory.	Specific gravity at 40° C.	Saponification equivalent.	N/10 Na OH Vol.—for 2.5 gms.
2	Crude cottonseed oil.	..	·91202	283·3	·171
2	Refined cottonseed oil	..	·91403	283·3	·147
16	"Off quality yellow oil"	..	·91136	285·2	·080
19	"Prime white oil"	..	·91214	285·9	·088
31	Refined cottonseed oil	A	·91118	285·7	·000
43	do	D	(*)	287·1	·000
53	do	F	·91130	286·2	·000
97	do	L	·91082	289·1	·135
15	Cottonseed stearin	..	·90939	284.2	·092
54	Cottonseed stearin, yellow	..	·90949	284·1	·083
	"Blown cottonseed oil:"				
16	"Off quality yellow oil"	..	·91136	285·2	·080
17	No. 16 blown two weeks at 30° C.	..	·93912	289·0	1·010
18	No. 16 blown two weeks at 30° C., then 24 hours at 100° C.	.	·96104	..	1·505
19	"Prime white oil"	..	·91214	285·9	.087
20	No. 19 blown 16 hours at 100° C.	..	·92271	275·8	·513
1	Cotton feed compound.	..	·90932	289·5	·190
121		..	·90977	287·2	·199
122		..	·90950	288·4	·392
123		..	·90873	286·9	·400
124		..	·90835	286·4	·000
125		..	·90884	289·2	·000

*Not enough for analysis.

The effect of the prolonged oxidization is to raise the specific gravity of the oil and to lower its percentage of insoluble acid, as shown by the saponification equivalent and Reichert's method. These blown oils were thick and had quite an agreeable smell and nutty flavor. It is very questionable whether they could be used in the manufacture of oleomargarine.

New York Receipts and Exports.

RECEIPTS.

	Week ending Dec. 19, 1888.	From Jan. 1, 1888.	From Jan. 1, 1887.
Naval Stores:—			
Crude Turp., bbls.	137	2,254	2,242
Pitch, bbls.	130	3,375	2,104
Rosin, bbls.	3,516	373,119	333,958
Spirits Turp., bbls.	2,492	93,134	103,409
Tar, bbls.	625	30,222	23,017
Oils:—			
Lubricating, bbls.	281	46,559	38,873
Lard, bbls.	....	6,968	5,256
Cotton seed, bbls	1,057	85,131	92,809
Oil cake, pkgs.	9,478	390,266	443,720
Provisions:—			
Lard, tcs.	11,445	320,553	392,896
Lard, bbls.	....	....	....
Lard, kegs	8,279	187,900	195,498
Lard, cases	2,078	61,532	61,266
Miscellaneous:—			
Tallow, hhds.	19	2,536	445
Tallow, tcs.	424	12,157	17,128
Tallow, bbls.	1,003	44,015	44,281
Tallow, casks.	62	1,178	591
Stearine, hhds	15	1,086	1,202
Stearine, tcs.	22	6,605	18,317
Stearine, bbls.	85	1,485	2,302
Stearine, casks	....	25	2
Grease, tcs.	258	16,516	16,762
Grease, bbls.	668	22,753	20,572
Flaxseed dom. bu.	....	275,332	1,604,850
Whisky, bbls.	2,327	80,454	84,792
Highwines, bbls.	910	58,490	62,505
Alcohol, bbls	610	26,826	35,449
Soap stock, bbls.	....	2,280	3,271
Oleo stock, tcs.	2,544	78,948	80,387
Oleo stock, bbls.	1,015	23,217	15,473
Butterine, pkgs.	342	13,731	37,106

EXPORTS.

	Week ending Dec. 8, 1888.	Also from Jan. 1, 1888.	Also from Jan. 1, 1887.
Flaxseed, bush.	.....	.....	15,911
Naval Stores:			
Crude Turp., bbls.	.....	.....	195
Spirits Turp., bbls.	498	20,309	28,504
Rosin bbls.	1,407	196,322	155,440
Pitch, bbls	39	4,701	4,051
Tar, bbls	86	4,783	5,779
Coal tar pitch, tons	.....	...	1,600
Oils:			
Lard Oil, gals.	11,062	396,237	485,132
Lub. Oils, gals.	202,982	18,728,752	17,142,950
C. S. Oil, gals	66,504	1,556,279	1,613,196
Residuum, gals.	.....	398,000	268,830
Naphtha, gals	110,000	6,752,613	7,377,702
Benzine, gals.	16,250	420,915	426,382
Petlm, Crude, gals	266,900	26,720,677	25,158,218
Petlm, Refin'd, gal.	6,041,374	314,203,946	319,567,455
Oil Cake, lbs.	2,315,250	143,388,061	174,714,358
Oil Meal, lbs	347,700	7,040,279	7,777,883
Provisions:			
Lard, lbs.	4,501,658	150,957,906	182,853,600
Stearine, lbs	59,000	2,100,434	4,388,340
Grease, lbs.	244,904	22,491,752	49,190,664
Tallow, lbs.	1,239,904	42,381,932	35,477,532
Whiskey, bbls.	64	8,291	7,465
Alcohol, bbls	135	1,517	7,000

Paraffine.*

To these questions—Is paraffine already present in rock oil, or is it produced during the working up? Is rock oil paraffine identical with that obtained from other sources? there has hitherto been no sufficient answer. I have, therefore, labored in this field of research; results as yet incomplete, still, interesting. Engler repeatedly found that on distillation of petroleum residues crystalline paraffine is obtained; the product obtained directly from petroleum is amorphous, like ozokerite. I have often confirmed this result. Shaedler found that vaseline (as obtained by decoloration of petroleum residues) consists of isoparaffines, while the officinal paraffine ointment (from brown coal-tar paraffine and bleached paraffine oil) consists of normal paraffines; and vaseline itself also consists (Engler and Bohm) of a liquid and a solid portion (amorphous paraffine).

What does "paraffine" mean? Chemically, it means the members of the saturated (C_nH_{2n+2}) hydrocarbon series; technically, it means solid hydrocarbon, inert in presence of chemical agents and excluding, therefore, such hydrocarbons as naphthelene, anthracene, and the like. Is this actual technical paraffine simple or a mixture? Reichenbach (the discoverer of paraffine) considered it as a simple substance (1858); Pouchet championed this view (1874), giving the formula $C_{24}H_{50}$. The majority of investigators hold it to be a mixture. Again, if a mixture, are the hydrocarbons all saturated or not? Gay Lussac, Magnus, Malaguti, Schrotter, Anderson, Hofstadter, Philipuzzi, Lippmann and Hawliczek, Pouchet, Gill and Meusel, and others, have discussed this. The conclusion is in favor of saturation; and, according to Krafft, brown-coal paraffine is identical with normal paraffine, and individual members ($C_{23}H_{48}$, $C_{24}H_{50}$, $C_{25}H_{44}$, $C_{26}H_{54}$) can be separated, the normal paraffines preponderating over their isomers, because of their greater stability. The same preponderance of normal paraffines would be established, whatever were the source of the paraffine—wood, turf, ozokerite, etc.—because of the exposure to high temperature. It is just the same with petroleum paraffine. Ozokerite and petroleum contain paraffine-like substances. Are these identical with those obtained by distillation of the same, or do they contain a large proportion of isomers, as well as of normal paraffines, or do the normal paraffines preponderate?

Ozokerite (when bleached, "ceresin") differs from paraffin, not essentially, but in the following respects: Absence of crystalline structure, absence of gloss, and absence of ring when tapped; a greater pliancy and kneadability. Chemical composition, fusibility, specific gravity, vary somewhat in both paraffin and ozokerite, so that these have no significance. Some have considered paraffin to exist ready formed in ozokerite, and to be separated by distillation, which was contradicted by this—that you could not extract paraffin from ozokerite by any other means than distillation. As for me, I find that you can do so quite simply; a quantity of ceresin (melting point, 65° C.) is dissolved in an excess of hot amyl alcohol. On cooling, it deposits mother-of-pearl scales. Repeat this process, and between the fifth and the tenth purification you have arrived at paraffin, crystalline and of higher melting point than the original ceresin. The amyl-alcohol employed contains amorphous ointment-like material, melting at 32° to 33° C. This shows that ozokerite, or ceresin, contains crystallizable paraffin, and also a colloid amorphous paraffin, which prevents crystallization, and which is more soluble in amyl-alcohol; and this would appear to become decomposed or altered when subjected to distillation, so as to yield crystallizable paraffin.

Petroleum residues are amorphous, though ill-defined crystals do now and then appear in them; for example, purified residue, or vaseline. On distillation the amorphous gelatine-like material yields crystalline paraffin whether the distillation be ordinary, in a vacuum, or in steam. Is it that there is a real chemical or physical change throughout, or is there only a change in the binding material?

*Abridged from the *Zeitschrift fur angewandte Chemie.*

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I am inclined to the latter view. Treacle contains sugar, which cannot crystallize; crystals cannot well form in a gelatinized solution. In petroleum residue a kind of paraffin-treacle, vaseline being practically still the same kind of thing, only partially purified? vaseline contains liquid and solid constituents: which of these is it that hinders crystallization? I separated the two, and then experimented on the liquid, dissolving in it, when warm, various proportions of ozokerite paraffin. the result was not homogeneos, but the cooled mass was full of crystals (not in the same shape as in the paraffin employed); the liquid did not, therefore, completely bar crystallization, and it is probably some component of the solid which does so. I then treated some petroleum residue with amyl-alcohol, in the same way as the ceresin above mentioned, and obtained a very pure, hard, crystalline, transparent paraffin; quite a similar result, through removal of the colloidal substance. Crystallizable paraffin, therefore, exists both in ozokerite and in petroleum residues, together with colloidal substances, hindering crystallization; on distillation, the colloids are decomposed or transformed, and the distillate, is, to a certain extent free from them.

However the distillation may be conducted there are always liquid products; this indicates decomposition; and it occurs when the residue distilled is itself hard and paraffine-like, or when ozokerite is distilled. This paraffine-like residue I shall call, for shortness, protoparaffine; the paraffine produced by distillation I shall call pyroparaffine. If pyroparaffine be subjected to redistillation, it produces incomparably less decomposition product than ceresin or protoparaffine. Bleached ozokerite and bleached petroleum residue are, to judge from their indifference to chemical agents, purely hydrocarbons and saturated hydrocarbons; but their microscopic character also differs from that of pyroparaffine; and they may contain not only isomers, but also hydrocarbons of other series, and possibly some representatives of aromatic series, as in Baku and Oelheim oil; these components being, for the most part, broken up by heat. It is not probable, from analogy, that simple heat will convert isoparaffines into normal; they are, on the contrary, broken up; but the normal paraffines stand the heat and are thus distilled over.

Engler and Bohm have found that the distilled paraffine (pyroparaffine) is slightly richer in hydrogen (14·1 as against 13·7 per cent.) than the solid portion of the vaseline experimented on by them; and its melting point 3° C. lower.

Hitherto the price of oil has not been governed by its percentage in paraffine, for want of a good test. The test has been an imitation on the small scale of distillation on the large. The principal sources of error in it are: The solubility of paraffine in oil, varying with quality and temperature, and the inapplicability of small scale results to large scale working. All small scale experiments give a smaller proportion of light oil than is produced in practical working; as much as 5 to 15 per cent.; this affects the utility of the experiments. Results hitherto given state not the percentage of paraffine in the oil, but the percentage of product; and statements vary so widely that Baku petroleum, for example, is said by one observer to have ¼ per cent., by another to have 5 per cent. of paraffine; Pennsylvanian, 2 or 3 and 0·7; Galician, 1, 3, and 11·4; and these differences arise not from the quality of samples so much as from the mode of estimation.

Paraffine is not a homogeneous thing which can be sharply defined; it shades off into the oils which accompany it; and some of the liquid oils have a higher boiling point than some of the solids—which indicates that all the constituents are not of the same chemical series. The normal hydrocarbons have the highest melting points; the isomers, containing methyl groups, have a tendency toward fluidity; so that there may be a solid normal paraffine, the isomers of which are liquid. The same also at the distillation point; isomers may distil when normal remain; and between this and the fact that there are representatives of other series present, the matter of consistency may become a very complicated one. This, together with the extraordinary solubility of one thing in another, makes analytical separation by distillation impossible. I think we ought to agree upon some definite melting point as marking off those components which may technically be called paraffine. If we adopt a point between 35° and 40° C., we have material which, together with the less fusible paraffins always present, gives a practical melting point of 45° to 50°; and this agrees well with the melting point of the product obtained by separation by amyl alcohol at 0° C.

If this method be adopted, it must be noted that amyl alcohol takes up from crude oil dark resinous and bituminous material and deposits that with the precipitated paraffin; but if a mixture of equal volumes of amyl alcohol and 75° ethyl-alcohol, with some 5 per cent. of benzol, be used for redissolving, this dark matter will be left behind even though the solvent be warm.

My method is this: Distil at 302° Fahr. so as to get rid of the solvent light oils without overheating; weigh off some of the residue; add ten times the quantity of amyl-alcohol, and then the same quantity of ethyl-alcohol 75°; expose for twelve hours to a temperature of 0° C. (surround with melting ice or snow); filter cold: wash on the filter with a cooled mixture of two parts amyl-alcohol and one part 70° ethyl-alcohol, then with ethyl-alcohol alone; put the precipitate in a dish; dry at 230° Fahr.; then treat, according to the purity of the precipitate, with 5 to 50 per cent of concentrated sulphuric acid, to which one-third as much fuming acid is added, at 302° to 320° Fahr. for 15 to 30 minutes with brisk stirring; neutralize; put the precipitate in an extractive apparatus, and lixiviate. The loss is from 5 to 60 per cent of the crude precipitate.

This presents, however, only a theoretical interest as applied to crude oils; it is of importance as applied to the distillate obtained on the small scale, and in this case the purification with acid may be, for practical purposes, omitted, since the impurities are small.

It comes out quite clearly, from my experiments, that on distillation of crude oils at high temperatures the colored asphalt-like and resinous admixtures themselves yield paraffin. They contain oxygen, and perhaps phenol, ketone and ether groups, but heat decomposes them and paraffin is found among the products; and this is quite analogous to what happens when coal, peat and wood are distilled, for the greater part of the paraffin obtained by distillation does not pre-exist in the raw material. Steam tars differ from retort tars; the former saponify with alkali, the latter do so only partially; the latter contain appreciable quantities of paraffin. Natural rock oil itself appears, from its chemical constitution, to have been produced by the reduction of fatty material (Hofstadter).

Protoparaffine (amorphous) is much more readily decomposed by heat, even in presence of steam, than pyroparaffine is; rock-oil paraffine is rich in the former, retort paraffine in the latter, normal, crystallizable. Still repeated distillation, even of the more stable normal paraffine, will cause its higher members to split up (Thorpe and Young) into a lower more liquid paraffine and an olefine, and thus bring down the melting point. Still more subject to such action are the isomers of the normal hydrocarbons: and it is quite possible for fluid isomers to break up into a light olefine and a solid normal paraffine.

We may thus have, on distillation of crude rock-oil residues, both mechanical and chemical changes; distillation of normal paraffines, with partial decomposition; partial transformation of paraffine isomers into normal paraffines and isomers; partial distillation of the same without decomposition; and break-up of the oxygenated compounds.

The greatest actual yield is obtained by an amyl-alcohol and sulphuric-acid process, which is not suited for work on the large scale. The next is by heated steam and vacuum distillation of the residues and recovery of paraffine from the distillate, or, in the case of residues poor in paraffine and rich in asphalt, a decomposing distillation. The former has the advantage of leaving amorphous paraffine undecomposed, and thereby producing much higher qualities of lubricating oil, for the liquid paraffines corresponding to the amorphous solids have much greater viscosity than those corresponding to the crystallizable paraffines: and the degree of viscosity will therefore come to depend upon the proportion of isoparaffins present undecomposed by heat.

A Reminiscence of the Days of Ten-Dollar Oil.

An August morning in the season of $10 oil among the oil yards that extended along the river front of the old Third ward, presented a busy scene. The heat generated a yellow fog from the thousands of barrels of oil in the storage yards. Long lines of wagons thronged the busy entrances, and the lines of bulk and barrel boats extended from the mouth of the creek to Moran's Eddy. The song of early birds, if they could afford to sing in such busy times, were drowned out by the vigorous remarks of the teamsters to their jaded cattle.

On this eventful morning, in front of the old Parker warehouse, sat James Parker, familiarly known as "Uncle Jim," by all the boys. His large frame was surmounted by a face that always wore an expression of guileless innocence. Yet he was noted as the great est practical joker of the oil country. On this particular morning his expression bore a preoccupied air that portended fun at somebody's expense. It was the look that is assumed when a victim is being arrested. He was evidently oblivious of the picturesque surroundings. Several feet in front of where he was seated, was the wooden conductor hole of an abandoned oil well. During the preceding night this had filled up unaccountably with oil, and upon the glassy bubbles at the top of this, the mild speculative gaze of "Uncle Jim" rested. How patient endeavor was awarded is related below.

On business intent Will Thompson and Capt. Tom Mechling, leading dealers and operators of that date, made their appearance at the warehouse front, and were heartily welcomed. During the extending of their courtesies, the gaze of Uncle Jim was scarcely diverted from his objective point, and his air of preoccupation was high art in its apparent simplicity. It required no great effort of mind-reading on the part of the visitors to divine the object, in part, at least, of Uncle Jim's meditations, and they too became interested in the contents and surroundings of the attractive spot. After some desultory remarks on other subjects, after the usual manner of experienced traders, the visitors came to the point and asked for an explanation of the apparent phenomenon. Uncle Jim had none to give. Supposed that the surface oil had soaked through the gravel, and that it did not amount to anything. All this was said with characteristic frankness, and yet the sharp-eyed twain noticed that Uncle Jim continued his gaze upon the one place. This indifference whetted their desire. They felt that Uncle Jim must know it was a good thing from the interest he showed. Then a game of dicker was started. Uncle Jim didn't want to sell it, but had no objections to leasing the well to responsible parties, for such time as might be agreed on; it might be a good thing, for no machinery or rig was needed, for the oil could be pumped out into barrels by hand, by means of an ordinary boat or barrel pump. This served to raise the desire of the speculators to fever heat, and the price and duration of lease came up for discussion. It was finally agreed that for $20 spot cash, Thompson & Mechling could have the proceeds of the well until 6 o'clock of that same evening. The cash was handed over and the work of pumping out the oil at once commenced.

A boat pump, a big funnel and several empty barrels were procured, the parties in interest pulled off their coats and the work began. The first obstacle was the shallow depth of the well-hole, which scacely allowed the pump to stand upright. This was remedied and the speculators relieved each other at brief intervals in working the pump. Uncle Jim took a kindly interest in the work, and so did a number of operators, boatmen and teamsters. The first „head" was a few bucketfuls of rather dirty oil, then the sand and gravel choked the pump. It was warm work, but suggestions were not lacking from the bystanders as well as refreshments. Noon hour exhibited no really productive results, and hope began to droop. The suggestion made to Uncle Jim to give up the job if he would refund half of the price paid, was mildly but firmly declined by that placid personage. Up to 4 o'clock in the afternoon the work was a repetition of that of the forenoon, except an increase in the number of spectators. As yet no oil had been barrelled, that pumped out not being of the merchantable kind. A pi'e of gravel and two greasy, perspiring and slightly profane individuals, the actors, were prominently visible and the same gentle smile illuminated the features of Uncle Jim.

About this time a thought struck Mechling with force of a car load of brick, that something was wrong, and this the faint twinkle of Uncle Jim's eye confirmed. He threw down the pump, expressed himself to the effect that six hours was long enough to pump on a vacuum with a hand pump, knew when he had enough; Uncle Jim could have the money and he'd quit. Thompson did likewise. Then the tall form of Uncle Jim towered up. In his hand he held two $10 notes. With these he gave a mystic sign that is still in daily use in the oil country, started for the bar room of the Petroleum House, followed by the principals and the crowd, and handed over the cash to Charley Pithers, mine host. The clink of glasses and sound of gurgling liquids continued until far in the night, and the participants told the story to the blinking morning stars as they wended their way homeward.—*Derrick.*

Explosions of Nitro-Glycerine in the Oil Regions.

"Doc" Haggerty, the driver of the nitro-glycerine wagon for Operator Van Vliet, who was blown into fragments a few days ago by an explosion of a quantity of the fluid which he was carting along the road near Pleasantville, had an insurance of $5,000 on his life. Only a few small pieces of flesh believed to be his could be found in the vicinity of the explosion, and a physician having pronounced them human flesh certificates for their burial was issued. The insurance company has refused to pay the policy on Haggerty's life on the ground that there is grave doubt of Haggerty's having been killed in the explosion, as his body could not have been so nearly annihilated. The company professes to believe that Haggerty caused the explosion while at a safe distance and has disappeared, his intention being to leave the impression that he is dead so that the insurance money may be secured to his family. It is alleged that in all the terrible list of fatalities in the oil regions through the explosion of nitro-glycerine there never was a case, and could not be a case, where the result was so nearly utter annihilation of a body as is shown by this explosion. Against this assumption that this is an entirely new illustration of the power of nitro-glycerine, as demonstrated by previous explosions, a strong protest has been raised throughout the oil regions.

"If there is anything that is well known in the oil country," said a lifelong oil operator, "it is this terrible mysterious feature of nitro-glycerine explosions—the almost complete annihilation of matter, especially of the human body, which in a majority of cases results from a fatal explosion of this deadly compound. There is not an operator in the whole region that cannot recall more than one illustration of it. I had a teamster named France once in my employ. Like all men of his class in the oil country there was nothing either above, below, or on the earth that he feared. He was in the habit of carting nitro-glycerine to any well I wanted it. Another employe of mine who helped France was quite as reckless as the teamster was. They became so careless in handling the explosive that other workmen would not stay in the place if they knew France was coming there with glycerine. These two men actually used to unload the stuff as they might unload a lot of bricks, France standing on the wagon and throwing a can to his companion some feet away, and the latter catching it and placing it on the ground in time to catch another can. As it takes a man with a good set of nerves even to ride on a wagon where he knows there is nitro-glycerine under the seat, this manner of handling a compound that frequently explodes under the slightest jar, will give an idea of what sort of nerves these two men had. Each one knew that if France's helper missed catching a can there wouldn't be enough left of them to cover the bottom of a snuff box, but they had the daring to take the chances.

"No one ever knew what caused it, and no one would ever have known who it was that was wiped out of existence except from the fact that we all knew who it was that was coming that way with nitro-glycerine just at that time. When we heard the explosion down the road that day there was only one remark made.

"'That's France's last trip!'

"The glycerine had exploded about a quarter of a mile from the well. We walked down there, and found the usual hole that a few cans of the stuff always dig when it goes off and the usual lot of splintered timbers. Three hundred feet off to the right of the road, in the woods, we found a wagon tire. We found the tail of one horse and small portions of the body of the other. In another part of the woods a man's kneecap was picked up, and although we searched over an area that it would have been impossible for any of the wreck to be thrown, that was all we found, except France's greasy cap lying by the side of a stump and his watch hanging on the limb of a tree.

"The disappearance of Haggerty the other day was not one whit more complete than was that of poor France. Only a few pounds of 'Doc's' horses also were found, and hardly a particle of the wood or iron work of the wagon. The nitro-glycerine safe, two, was removed from human vision by the explosion as effectually as though it had never been formed. What became of these materials? All who have had anything to do with it in the oil regions have had similar illustrations of the power of nitro-glycerine time after time. Look at that poor, reckless George Dolser, I think his name was, who disappeared at Red Rock, in the Bradford field a few years ago. He was walking along through the town with two or three cans of glycerine slung over his shoulder in a bag. He had been drinking too much, and in staggering along he fell head foremost and the bag flew over his head and the nitro-glycerine cans struck heavily on a rock. Not a building for half a block around was left standing. Dolan was a man that weighed over 200 pounds, and all that the most thorough search was able to recover of that 200 pounds of flesh and bones was part of one of Dolan's feet—less than one pound!

"The almost total disappearance of 'Doc' Haggerty's body is accounted for by some by the theory of spontaneous combustion. That is something like the theory that a well-known scientific man once advanced to explain the mysterious characteristic of nitro-glycerine. He said it was instantaneous vaporization of matter. That theory we all admitted was plausible as to flesh, but we could not believe that the great masses of bone in the human body, nor heavy pieces of iron and wood, could be reduced to vapor in the twinkling of an eye. Another theory that met with great favor for some time was that of atomization of matter by exploding nitro-glycerine. But this theory was disproved in a most frightful way in the Allegheny oil field about three years ago. This case was not characterized, by the way, by such a great degree of annihilation as others. Charles Berridge, a well known oil man, was blown up by nitro-glycerine. The ground around was covered with spotless, new fallen snow. On each side was a high and abrupt hill, only a few rods intervening. Berridge was a large man, of probably 180 pounds weight. The remains of the poor man were searched for carefully and long, for he was a good man and a popular one. The coffin in which they were borne to the grave, contents and all, weighed less than 10 pounds! Now for the atomization theory. The greatest force of a nitro-glycerine explosion is always upward. If the matter had been reduced to atoms, however infinitesimal, in falling back upon that spotless snow some trace of them must have been seen upon it. But it remained as spotless as before.

"This singular feature about nitro-glycerine explosions has been commented upon and puzzled over every time a fatal one has occurred in the oil region, from the earliest day the explosive was introduced among the wells. It was never questioned before, and if this case of poor 'Doc' Haggerty's gets into the courts, which it seems likely to do, we may be given some scientific light on the subject that will clear up the mystery."

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PETROLEUM MARKET.

TUESDAY EVENING, Dec. 25, 1888.

The first two days of the week under review gave no indication of an impending change and the average professional operator was confident that the market would drift along in the lower nineties until after the holidays, when the dealings in futures are relied upon to give speculation in petroleum certificates a boom. It was therefore like a clap of thunder from a clear sky that the sensational report from Bradford startled the trade on Friday morning It was to the effect that the Standard Oil Company had announced that certificates for Lima oil would be issued on the first of January and that the price of the oil would be advanced. After the first shock of surprise and consternation the cooler and more reasoning among the operators realized that the report was without foundation in fact, but before an authoritative denial could be secured the mischief had been accomplished, and the market broke 4½c. There were many who did not credit the report, but were only too glad of an opportunity to use it for a bear argument. In fact, all sorts of reports were circulated, based on the original one, and it was repeatedly asserted that the Standard Oil Company contemplated issuing certificates for Lima oil, to be dealt in on the exchanges, and another report had it that Lima oil was to be delivered on the present certificates of the National Transit Company. During this time of excitement reports were also received from the Western exchanges, where a similar effect was reported. On the Pittsburgh exchange many of the longs were badly "nipped," and some suffered severely, while here there were no very heavy losses, at least no one squealed, and no failures to meet obligations were reported. On the following day it was found that operators on the Stock Exchange had sold heavily, both here and at Oil City and another raid was made, but the price could not be kept down by the professional manipulators, as the strong position would assert itself in the buying of the dealers who had got over their scare and realized that here was a golden opportunity to load up with cheap oil that would probably not occur again. Another depressing report was that there was still the greater part of the 5,000,000 bbls of the P. P. A. reserve oil unsold. For this report there was some foundation in the continued refusal of the leading members of the P. P. A. to either confirm or contradict a previous report that the oil had been sold. It was also known that the producer interest at Oil City had been liberal sellers and now the 5,000,000 bbls is as strong a bear factor as it has been during the past year. The average operator fears that should he assist to advance the price the producers will dump their load when he least expects it, and consequently the P. P. A. by the course of mystery pursued forces the operator to the bear side in self defense. In other respects the situation is unchanged, the deliveries exceeding the runs to the extent of about 30,000 bbls per day and the trading on the several exchanges continues to be light. On the first business day of the new year trading in futures will be began and then "we shall see what we shall see." The transaction during the past week show an increase over those of the previous week, the sales footing up 8,420,000 bbls against 6,946,000 bbls for the preceding week. The clearances of the local exchange amounted to 20,373,000 bbls, against 16,356,000 bbls during the preceding week. The total clearances reported for the other four exchanges amounted to 47,391,000 bbls against 47,798,000 bbls for the preceding week. The highest price of the week was reached on Wednesday, when 93⅝c was touched. The lowest point of the week was 87⅞c, and was touched on Friday. The opening price last Wednesday was 91¾c, and the close this evening was at 89¾c, showing a loss as the result of the week's trading of 2⅛c, while the extreme range of fluctuations for the week was 5¾c.

In the Clarion field J. T. Jones's No. 4, Sloan farm, is dry. This is the first well drilled in this field since Tom Huling's duster, not finding any sand. The Hulings well, on the Kenisston lot, is eight feet in the sand and showing good. Ritts & Co., on the Ross lot, is 14 feet in the sand and has 1,000 feet of fluid in the hole. Keifer, Dennison & Co., on the Ivory lot, is doing 5 bbls per day. Campbell No. 2, Campbell farm, is doing 90 bbls a day. Piper No. 2, Campbell farm, is doing 140 bbls a day, and Cadwallader No. 2, Barber farm, is doing 100 bbls. Stitt & Coast, on the McCoombs lot, cased at a depth of 400 feet. Keifer, Dennison & Co. have made a locatien for a rig on the western corner of their Johnson lease. The burned rig on the Black heirs' farm is being replaced by another which will be ready for use in a few days. Three hours more drilling on this will tell whether it is a gaser, gusher, or a duster. They have the gas, and all they want now is the oil.

At Brush Creek, Jennings, Munhall and Snee show about the same. They have been drilling Jennings deeper, but cannot increase her production. They are also cleaning out the Munhall well, it having filled up and never been cleaned out since it was shot, but they have not increased her production. The sand seems to run in as fast as they take it out. There is considerable bustle in the vicinity of the Jennings' well in the way of rig building; all are trying to get the drill started first. The Ullrigh is still waiting on fishing tools.

In the Dawson Run field, Grove & Co.'s No. 2 on the Dawson farm was tubed and is running at the rate of 75 bbls per day. Kelly & Co.'s No. 1 on the P. Beard farm is producing about 40 bbls a day. John Stroub has made a location on the O. Beard farm, 400 feet north of Kelly & Co.'s No. 1, same farm. Grove & Co.'s No. 1 on the O. Beard farm is doing 20 bbls. a day. The Compromise Oil Company's No. 1 on the McCalmont farm is drilling and is down 300 feet. Carnahan Bros. are drilling a well on the Beaver and Kepler farm and are down 250 feet.

In the Washington field Graham's farm well had two feet of stray or sand shell, in which she had oil enough to fill up and make a small flow. Said stray or shell was two feet thick, from which they cut into slate and have shut down, but will continue drilling. Murphy Bros., White farm, went through the sand into slate with the second bit, and has 500 feet of oil in the hole. They will drill deeper. Reed & Co., Wm, Knox No. 6, is through the sand, and shows for a small producer. Knox No. 3 is close to the sand. Grimes' well is in the sand and gaining strongly, but as yet shows no oil.

At Mt. Morris, Hukill & Eaton No. 3, Donley farm, is better than the earlier reports made it appear. It was tubed on Sunday and in 18 hours pumped 60 bbls, when the cups gave out. There is very little gas in the well and the salt water that appeared in the first reports was found in the first two bits, and didn't amount to much, anyhow. They found the oil at 110 feet in the Big Indian, and penetrated the pay streak 18 feet, when they stopped. There was no salt water found in the bottom of the sand, nor anywhere else was there enough of it to hurt the well. This new feature alters the situation as far as that particular well is concerned, and to a certain extent the territory for a limited distance beyond it, but the presence of water in the top of the sand where gas would be expected, and the conspicuous absence of gas in the oil levels is suspicious, to say the least.

Along Oil Creek considerable interest is manifested in the well of C. C. Joy, of Titusville, and others, at Walnut Bend. The well, which was drilled three feet into the sand and is now plugged, is reported to have made a very good showing. It is located a short distance from the one Lew McKim drilled and found dry and uninteresting. Other operators in that section are A. P. Dale, the McGee Bros., of Warren; Trax & Simmons, and Peter Berry, of Bailtown. A. P. Dale is drilling a wildcat well on the Hunt & Hallett tract, between Horse Creek and the Bend. Peter Berry is putting down his first well on the Tate farm, a mile to the north. Trax & Simmons have completed two new wells on their property, the old Anderson farm, making five in all, and have suspended operations until spring. Their five wells are producing in the aggregate about fifteen barrels per day. The McGee Bros, have a well drilling on the Young farm. Along Plumer road, a couple of miles out from Oil City, on Captain Wm. Hasson's farm, there are now five producing wells, the fifth one being recently finished, and the drill is working in the sixth one. Johnson & McCammont have finished one on the Clapp farm, and have the rig for another. Fornoff & Settle have a well drilling on their property this side of the Shaw farm. The Continental refinery folks, on their 500 acre tract, adjoining Captain Hasson's farm, have completed their seventh well, and will continue operations. They have leased 200 acres in the hollow east of the 500 acre tract, and will also operate there.

Wednesday, Dec. 19.

The feeling was rather stronger this morning although the first sale was made at 91⅞c, the same as the close of last evening. As the bidding was not brisk the price advanced slowly and the fluctuations were of limited extent, but the opening price was the lowest of the day. After about an hour's trading a strong bull movement was started which was materially assisted by reports from the Pittsburg exchange of a similar movement there. As the price was sent upward the bidding became quite active and during the noon hour 93c was reached. There was only a momentary halt at this but the fractions were thereafter added slowly and it was difficult, apparently, to force the price higher, but late in the day the figures were forced to 93⅝c. This appeared to be unwarranted by the conditions and a reaction followed which brought the figures again below 93c, the market closing somewhat unsettled at 92⅞c. There was a general belief, however, that 93c was warranted. The close showed a gain for the day of 1c while the range to quotations was 1¼c. The sales for the day amounted to 1,338,0.0 bbls. The scouts reported that the Graham, Cleland farm well have got the tools out and would probably be drilled by to-morrow. The Murphy well on the White farm was near the sand and would probably come in to-night. The Knox farm well was fishing. The Hurkill, Donley, No. 3 had declined to 30 bbls a day.

The half-hourly quotations were as follows:

A.M.		P.M.	
10:00	91⅞	12:30	92⅞
10:30	92¼	1:00	93¼
11:00	92⅛	1:30	93¼
11:30	92⅝	2:00	93⅜
12:00	92⅞	2:30	93⅜
		3:00	82⅞

The clearances were as follows: New York, 1,456,000; Oil City, 1,382,000; Pittsburg, 2,887,000; Bradford, 892,000; Philadelphia, 254,000; total clearances Dec. 19, 6,871,000 bbls.

Carrying rates were: New York, 25@30c; (renewals, 20c); Oil City, 30@35c; Pittsburg, 30@35c; Bradford, 15@20c.

Market Dec. 20, 1887—80¾@82⅝c.

Thursday, Dec. 20.

The operators appeared to have regained confidence this morning, and the first sale was effected at 93⅛c, but this remained the highest price of the day, the figures soon giving way, owing to a lack of buying support. As the price declined there were fewer sellers, and trading became very quiet. Although the fluctuations were frequent they were of limited extent, but scalpers made the most of these, and their operations prevented the utter stagnation that threatened. Under the manipulation of the professionals the lowest price reached was 92⅛c, but there followed a prompt reaction to the prevailing figure, which was 92¾c. Toward the close the market gained strength, and closed in better condition at 93c. This made a loss for the day of ⅛c, under a range to quotations of 1c. The day was featureless, no news of consequence being received, nor was the day enlivened by efforts of a combination of operators. The sales for the day amounted to 930,000 bbls. The scouts reported that the Cleland well, Taylorstown, 2,000 feet south of Robert Knox, is in the top of the sand and showing even better than did that gusher at the same point. It made a very handsome flow, presumably from the stray sand, this afternoon. The William Knox No. 6, of the Buffalo Oil Company, will strike the sand about midnight. Murphy Brother's White No. 2 is showing small in the Gordon sand. It is reported to have had only 500 fee of oil in the hole with three bits run. A fourth sand pay streak may help it out. McGovern No. 2 shows dry in the Gordon sand, but is good for 40 to 50 hhds a day from the Gantz and stray sand. Wildcat rigs have been erected by Vandergrift & Co., on the A. C. Creacraft farm in Franklin and the John Finley farm in Finley township.

The half-hourly quotations were as follows:

A.M.		P.M.	
10:00	83¼	12:30	92⅝
10:30	92⅝	1:00	92¼
11:00	92⅞	1:30	92¾
11:30	92¾	2:00	92¼
12:00	92⅝	2:30	92⅝
		3:00	93

The clearances were as follows: New York, 3,436,000; Oil City, 2,756,000; Pittsburg, 4,291,000; Bradford, 1,514,000; Philadelphia, 384,000; total clearances Dec. 20, 12,381,000 bbls.

Carrying rates were: New York, 20@25c (renewals 25c); Oil City, 30@35c; Pittsburg, 30@35c; Bradford, 20c.

Market Dec 21, 1887—80⅝@81⅞c.

Friday, Dec. 21.

Some bidders apparently anxious to buy made the opening figure 93c, with sales following at 93¼c, when a rush to sell quickly sent the figures on the downward course. It was a genuine bear raid, started simultaneously on the local exchange and in Pittsburgh. The operators who managed the raid had evidently been waiting for a good opportunity, and it came in the shape of the sensational report from a Bradford paper to the effect that the Standard Oil Company had decided to issue certificates for Lima oil after the first of January, and to advance the price of that oil. While very few stopped to fully consider the report, the bears made use of it to hammer the price down, and it did not take much of an effort to create a scare, when the selling became general, and the excitement following recalled the palmiest days of speculative transactions. The report came to the Exchange from the office of the Bradford *Era*, and stated further that the Standard officials in Bradford had declined to deny or confirm the report. This it was which caused the report to prove such an effective weapon in bear hands. Here the report was promptly denied. The bears, however, had accomplished their purpose, having brought the price down to 88⅜c—a break of 4½c—before the noon hour. There was no decisive reaction, but under the manipulations of the operators the quotuations were of unusual extent, the figures again going above 90c, only to drop again. The close was at 88¾c, which showed a decline for the day of 4¼c. Trading continued fairly active throughout the day, and the total sales footed up 4,206,000 bbls. The scouts reported the Murphy well on the White farm was through the slate but filled up only 500 feet and shows for a small producer. The Graham Cleland well made a small flow in the third sand. It is now in the slate and shut down.

The half-hourly quotations were as follows

A.M.		P.M.	
10:00	93	12:30	90¼
10:30	90⅝	1:00	89¾
11:00	91⅛	1:30	89⅞
11:30	89⅝	2:00	89⅞
12:00	89¾	2:30	90
		3:00	88¾

The clearances were as follows: New York, 1,924,000 Oil City, 1,932,000; Pittsburg, 2,842,000; Bradford, 840,000; Philadelphia, 522,000; total clearances Dec. 21, 8,060,000 bbls.

Carrying rates were: New York, 20@25c; (renewals 20c); Oil City, 30@35c; Pittsburg, 30@35c; Bradford, 15@20c.

Market Dec. 22, 1887—80¾@81⅝c.

Saturday, Dec. 22.

The first sale this morning was at 89¾c, showing a gain of 1c over the closing price of last evening, showing increased confidence as a result of the prompt and emphatic denials of the report that Lima oil would compete with the Pennsylvania product. There were, however, quite a number of sellers among those who had bought at the lower figures of yesterday, and others were only too willing to help depress prices with the purpose of buying as the figures declined. It also being reported that there had yesterday been heavy selling on the Stock Exchange, efforts were made to pull the figures down, which resulted in making the lowest price of the day 87⅜c. The figures could not be kept down, however, there being too many to take advantage of the lower figures, there having been no loss of confidence, as the objects of the bear movement were unmistakable. During the remainder of the session the figures went steadily up until 90⅛c was reached shortly before noon, while the close was at 90c. This made a gain for the day of ⅛c under a range to quotations of 1¼c. Trading was active during the entire session, and at times somewhat exciting. The sales reached 1,499,000 bbls. The field reports were to the effect that the Graham Cleland well had produced 20 bbls during the 24 hours ending at 6 P M. yesterday. They will drill deeper. The Murphy White farm well was drilling but refused to flow, and showed for a small producer. The Reed, Davis Knox No. 6 was five bits in the sand and filled up 700 feet, but refused to flow. Their No. 3 is three bits in the sand, but shows only a little oil as yet.

The half-hourly quotations were as follows:

A. M.		P. M.	
10:00	89¾	11:30	89
10:30	88¾	12:00	90
11:00	88¾		

The clearances were as follows: New York, 9,442,000; Oil City, 6,380,000; Pittsburg, 8,014,000; Bradford, 3,330,000; Philadelphia, 1,028,000; total clearances Dec. 22, 28,194,000 bbls.

Carrying rates were: New York, 10@15c (renewals 15c); Oil City, 25@30c; Pittsburg, 15@20c; Bradford, 20c.

Market Dec. 23, 1887—80¾@82¾c.

Monday, Dec. 24.

There was little disposition shown to do business at the opening this morning, most of the brokers gossipping in anticipation of a frolic when the band which had been engaged should be notified to begin the annual jollification. The market opened at 90¾c, but soon dropped to 89¾c, the lowest point reached, while the opening price remained the highest for the day. A few bidders coming to the rescue, the market recovered, and for the remainder of the day the price hovered around 89¾c, which was also the closing figure, showing a loss for the day of ⅜c under a range to quotations of ¾c. The sales footed up 447,000 bbls. Trading was very slow during the forenoon and just after the noon call the Twelfth Regiment band marched into the pit and began to play, which put an end to further trading, the younger and more frolicsome members indulging in all manner of capers, funny, ridiculous, and at times exceedingly boisterous. The hats sailing through the air and used as footballs, would have made the heart of a hatter glad. A pretty sight, and one at times very amusing, were the meteors of paper shooting through the air, but unlike the celestial meteors the paper ones could always be seen to alight, and could sometimes be felt as well. The trading after the frolic was only moderate, many of the members leaving. The well news was to the effect that the Grimes well was in the sand, gasing very strong, but had no oil, and so far shows for a dry hole. The Graham, Cleland farm well, had drilled four bits, but shows no increase, and the well shows for a 10 barrelers. The Knox No. 6 was through the sand, and shows for a small producer.

The half-hourly quotations were as follows:

A.M.		P.M.	
10.00	90⅛	12.30	89⅞
10:30	89⅛	1:00	90
11:00	89¾	1:30	89⅞
11:30	89¾	2:00	89⅞
12:00	89⅝	2:30	89⅝
		3:00	89¾

The clearances were as follows: New York, 4,120,000; Oil City, 3,112,000; Pittsburg, 3,867,000; Bradford, 840,000; Philadelphia, 324,000; total clearances Dec. 24, 12,263,000 bbls.

Carrying rates were: New York, 15@20c (renewals 10c); Oil City, 25@30c; Pittsburg, 25@30c; Bradford, 30@35c.

Market Dec. 24, 1887—82⅛@84⅛c.

The amount of daily sales and total for the week follow:

Date.	Bbls.
Dec. 19	1,338,000
" 20	930,000
" 21	4,206,000
" 22	1,499,000
" 24	447,000
" 25	.....
Total for the week	8,420,000

Following is given the opening, highest, lowest and closing figures for each day, in tabulated form for comparison:

	Opening.	Highest.	Lowest.	Closing.
Dec. 19	91⅞	93⅝	91⅞	92⅝
" 20	93½	93⅝	92¼	93
" 21	93	93¼	88⅝	88⅝
" 22	89¾	90¼	87⅛	90
" 24	90⅛	90⅝	89⅜	89¾
" 25	Holiday.			

The total clearances during the week at the several petroleum exchanges foot up as follows:

New York	20,373,000
Oil City	15,562,000
Pittsburg	21,101,000
Bradford	7,416,000
Philadelphia	2,512,000
	47,391,000
Total	67,764,000

The market for refined in barrels for export has been rather quiet, though there has been more business reported each day and the total for the week is considerably in excess of that of the week preceding. Shippers have been governed in their purchases largely by the opportunities for securing freight room at advantageous rates. The situation abroad is unchanged, and no important increase in the demand is expected. The sales for the week aggregate about 75,000 bbls, nearly all of which is for New York loading. The price of 70° Abel test has remained steady at 7·30c for New York loading and 7·20c for Philadelphia and Baltimore loading. The foreign markets show little change, yesterday's quotations by cable being, Antwerp, 19¾f; Bremen 7·70m; London, 6¾@6⅞d, and Liverpool, 6⅞@7d. Freight rates continue very high, the nominal rates to London being 3s 9d, and to Continental ports the range is 3s 9d@4s 6d as to port and vessel. Home trade lots have been in good request at steady prices. We quote 8@9¼c for State legal test; 8⅝@8¾c for 110 test; 8¾@8¾c for New York 100° flash, and 10¼@10¾c for 150° water white. Western lots are held at the same figures.

Cases for export have been very quiet, and he sales amount to about 125,000 cases. The price for plain tops has remained steady at 9 30c. Freight rates continue firm. The nominal rates for large vessels are: For Java 42@43c; Japan, 40@41c; Calcutta, 31@32c; Bombay, 31@32c; Rangoon, 36@37c; Singapore, 38@40c; Hong Kong, 40@41c; and for Shanghae, 47@48c.

Crude in barrels for export has been neglected, and only a few small sales are reported. Prices have remained steady at 6·65c for Bradford and 7·25c for Parker. Cases for export have been neglected, and no sales are reported. Prices are steady at 8·65@9·25c.

Prime city naphtha remains unchanged at 7¾c. For export there has been a better demand, and sales of about 15,000 bbls are reported.

Western residuum is quoted at 1¾@2c f. o. b. Barrels are quoted at 5@5¼c. No sales are reported for export.

Closing Quotations.

CRUDE.

National Transit Certificates	₩ bbl.	89¾@ 89¾
In bbls	₩ gal.	6·65@ 7·25
In cases		8·65@ 9·25
Residuum, bbls, for export 18@22°		5½@ 6
for domestic use f o b		1¾@ 2

REFINED, IN BARRELS.

Cargo lots, Abel test	₩ gal.	7·30
Philadelphia loading		7·20
Baltimore loading		7·20
50 bbl lots, f. o. b. or on dock		8¼@8¼
10 bbl lots, f. o. b. or on dock		8¾@8¾

HIGH TEST OILS—JOBBING LOTS.

115 fire test, S. W	₩ gal.	8¼@ —
120 fire test, S. W		8½@ —
150 fire test, S. W		9 @ —
State test		9½@ —
150 fire test, W.W		10½@10¾
300 fire test		10½@11½
New York city, 100 flash		8¼

REFINED IN CASES, 110 FIRE TEST.

Two-five, low screw, 10,000 lots		9·20@ —
5,000 to 10,000		9⅝@ 9¼
1,000 to 5,000		9½@ 9⅝
200 to 1,000		9¾@10
Under 200		10 @10¼

NAPHTHA AND GASOLINE.

Naphtha, crude, cargo lots, 68@72 deg		7·75
Naphtha, crude, car lots, 68@72 deg		7¾@ 7⅞
Naphtha, crude, 70 deg		8½@ 9¼
Sweet, 62 deg		8½@ 9¼
70 deg		9 @10
76 deg		9½@10¼
Gasoline, 86 deg		13 @14
88 deg		15 @16
90 deg		18 @19

EMPTY PETROLEUM BARRELS.

Cargoes, spot	$1 02½@1 05
Domestics, on dock	1 02½@1 05
ubject to inspection	1 05 @ —

Petroleum Statistics.

RUNS—TOTAL AND AVERAGE.

	Day.	Total.	Av'ge
Mon. Dec. 17	54,815	728,343	42,844
Tues. " 18	51,360	779,703	43,317
Wed. " 19	50,610	830,313	43,701
Thurs. " 20	49,984	880,277	44,014
Frid. " 21	50,980	931,257	44,346
Sat. Sun. 22&23			
January, 1888		1,048,641	42,025
February		1,175,102	40,529
March		1,193,133	38,488
April		1,200,977	40,032
May		1,301,015	41,990
June		1,289,616	42,987
July		1,260,486	40,660
August		1,285,553	41,469
September		1,181,482	39,382
October		1,235,040	39,840
November		1,335,506	44,520
December, 1887		1,223,643	39,472
Year, 1887		20,209,983,31	555

DELIVERIES—TOTAL AND AVERAGE.

	Day.	Total.	Av'ge
Mon. Dec. 17	106,372	1,307,043	76,885
Tues. " 18	70,858	1,377,901	76,550
Wed. " 19	74,440	1,452,231	76,439
Thurs. " 20	65,394	1,517,735	75,887
Frid. " 21	82,375	1,600,110	76,196
Sat. Sun. 22&23			
January, 1888		2,225,975	71,806
February		2,115,803	72,938
March		1,980,963	63,902
April		1,830,522	61,017
May		1,676,794	54,090
June		1,677,330	55,911
July		1,933,873	62,383
August		2,105,343	67,914
September		2,210,876	73,696
October		2,505,653	80,827
November		2,434,863	81,162
December, 1887		2,419,617	78,052
Year, 1887		25,519,175	69,916

CHARTERS—TOTAL AND AVERAGE.

	Day.	Total.	Av'ge.
Mon. Dec. 17	45,159	495,233	29,131
Tues. " 18	19,047	514,280	28,571
Wed. " 19	23,809	538,089	28,320
Thurs. " 20	19,047	557,136	27,857
Frid. " 21	68,333	625,469	29,784
Sat. Sun. 22&23	39,682	665,151	28,919
January, 1888		914,199	29,490
February		1,199,169	41,351
March		998,923	32,223
April		973,208	32,440
May		1,257 607	40,568
June		1,219,188	40,640
July		1,339,147	42,908
August		1,221,935	39,417
September		1,487,452	49,582
October		1,505,673	48,570
November		847,693	28,256
December, 1887		1,011,903	32,655
Year, 1887		15,204,735	41,657

CHARTERS FOR THE WEEK.

The total charters for refined in barrels and cases, crude in barrels and cases, naphtha, &c., during the week ending December 25, were as follows:

Refined, bbls	75.000
Refined, cs	134,000
Crude, bbls	7,000
Crude, cs	
Naphtha, bbls	14,500
Residuum, bbls	
Lubricating	
Total, crude equivalent	169,918

CLEARANCES FOR THE WEEK.

During the week ending Dec. 24, the clearances of petroleum, in gallons, from the port of New York were as follows:

Refined	1,914,325
Crude	1,078,520
Naphtha	350
Residuum	
Total	2,993,395

EXPORT STATISTICS.

The following table shows the total expors from the port of New York and from the United States, reduced to crude equivalent, in gallons, for the week ending December 15; also, the total shipments to date, with comparisons with 1887:

Exports from New York for week ending Dec. 15	5,980,275
Total exports from New York from Jan. 1, 1888	424,412,448
Same period last year	465,180,517
Decrease	40,768,069
Exports from U. S. for week ending Dec. 15	9,913,904
Total exports from U. S. from Jan. 1, 1888	581,282,074
Same period last year	644,719,897
Decrease	63,437,823

TOTAL EXPORTS FROM DIFFERENT PORTS.

	1888.	1887.
New York	424,412,448	465,180,517
Philadelphia	148,556,325	168,597,602
Baltimore	4,541,647	7,354 323
Boston	2,037,735	3,587,455
Perth Amboy	1,714,239	
San Francisco	19,680	
Grand total	581,282,074	644,719,897

CAPACITY OF VESSELS LOADING.

The following table gives the capacity of the vessels loading petroleum at the ports of New York, Philadelphia, Baltimore and Boston on December 24:

	NEW YORK.		PHILADELPHIA.	
	Bbls.	Cases.	Bbls.	Cases.
Refined	90,100	695,700	15,000	216,000
Crude	18,300	....	9,600	....
Naphtha	....	....	5,000	....
Total	116,300	695,700	30,500	216,000
	BALTIMORE.		BOSTON.	
	Bbls.	Cases.	Bbls.	Cases.
Refined	....	....	....	....
Crude	....	....	....	....
Naphtha	....	....	....	....
Total	....	....	....	....

Exports of Petroleum from New York

REFINED.

COUNTRIES.	Week Ending Dec. 24. Gals.	Jan. 1 to Dec 17, 1888. Gals.	Jan. 1 to Dec. 19, 1887. Gals.
Africa, Liberia		25,653	36,600
Sierre Leone		50	
South Africa		1,320,815	1,674,300
Zansibar		657,500	520,000
Algiers		1,434,390	1,203,790
Arabia		190,000	1,150,000
Argentine Republic	150,070	4,382,235	3,309,290
Australia	64,320	8,158,841	5,060,521
Austria		138,033	276,700
Belgium		34,098,348	35,790,262
Brazil	160	91,078,318	6,427,029
British East Indies, Aden		545,000	270,000
Burmah		231,851	2,428,570
India		21,014,300	22,458,340
Penang		630,000	607,600
Singapore		1,727,558	1,676,760
British Guiana	5,000	413,085	524,071
British West Indies, Antigua		42,040	44,020
Barbadoes		296,706	229,170
Basse Terre		41,870	44,570
Bermuda	1,857	119,416	120,030
Domenica		9,920	30,762
Jamaica	50	564,174	587,717
Montserrat		5,200	3,200
Nassau		60,347	45,923
St. Lucia		29,277	18,005
St. Vincent		108,050	25,745
Trinidad		251,910	346,601
All others		110,050	334,461
Canary Islands		132,350	243,000
Central America, Belize		69,495	81,126
Costa Rica		72,115	80,429
Guatamala		54,915	87,630
Honduras	310	30,222	34,473
Nicaragua		138,050	319,450
San Salvador		41,900	76,502
Chili		2,623,000	12,251,898
China, Cochin		2,873,750	2,329,286
All other	492,000	3,295,269	667,468
Cuba	763	556,937	937,940
Danish West Indies	2,960	45,559	48,444
Denmark		3,444,458	3,480,932
Dutch East Indies, Java		14,134,270	16,588,380
Macassar		75,140	256,000
Sumatra		562,450	330,000
Dutch West Indies	7,156	104,167	94,218
Dutch Guiana		109,581	25,600
Ecuador		96,290	75,170
England	402,950	47,390,010	51,059,046
Egypt		498,150	4,484,550
France		1,778,021	3,064,607
French Guiana		34,650	42,770
French West Indies	10,000	363,377	288,055
Germany	427,000	91,693,847	76,053,839
Gibraltar		562,700	662,419
Greece			150,000
Hawaiian Islands		100,000	164,640
Hayti		398,156	216,725
Ireland	213,257	4,272,630	4,780,022
Italy		872,697	1,345,760
Japan		10,944,960	9,424,560
Mexico		1,479,943	772,004
Malta		120,820	473,000
Mauritius Island		14,750	
Netherlands		24,520,787	34,741,847
North America, New Brunswick		825,452	920,498
New Foundland		277,744	194,735
Nova Scotia		510,219	444,894
Prince Ed. Island		189,750	189,750
Norway and Sweden		6,355,634	6,578,667
Peru		336,501	335,502
Porto Rico		595,347	481,610
Phillippine Islands		916,250	222,640
Portugal		710,648	1,294,731
Reunion		74,500	72,030
Russia		145,820	95,874
Scotland			
Siam		1,250,910	550,680
Spain	86,512	456,314	1,009,490
Turkey		435,764	2,980,134
U. S. of Col	5,440	621,650	547,854
Uruguay		2,443,703	2,801,071
Venezuela		787,149	926,996
Wales		345,316	122,088
Total	1,914,325	322,406,192	330,680,850

CRUDE.

COUNTRIES.	Week Ending Dec. 24. Gals.	Jan. 1 to Dec. 17, 1888. Gals.	Jan. 1 to Dec. 19, 1887. Gals.
Argentine Republic		52	
Australia			
Austria			
Belgium			25,400
Brazil			
British Guiana			
British West Indies		248	
Chili			10,000
Central America		2,167	499
Cuba	1,078,520	3,195,317	4,417,608
Danish West Indies			
Dutch West Indies			
England			213,217
France		28,358,450	22,067,389
Germany		1,230,503	6,879,585
Hawaiian Islands			2,525
Mexico		1,252,427	843,899
British North America			
Norway and Sweden		187,230	
Spain		7,716,275	8,698,615
Uruguay			
Total	1,078,520	34,275,617	43,158,737

NAPHTHA.

COUNTRIES.	Week Ending Dec. 17. Gals.	Jan. 1 to Dec. 17, 1888. Gals.	Jan. 1 to Dec. 19, 1887. Gals.
Africa			96
Algiers			5,000
Argentine Republic		2,625	665
Australia		48	
Belgium		368,244	324,500
Brazil		14,630	138,981
British West Indies		302	198
Central America			
Chili		237	
Cuba			500
Denmark			
England		3,873,100	3,742,110
France		2,484,222	2,321,155
Germany		881,431	
Hayti			10
Ireland		7,650	7,868
Mexico		1,200	
British North America	550	2,400	5,550
Norway and Sweden		399,873	453,011
Portugal		79,700	3,760
Russia			
Turkey			
Uruguay			
Venezuela			19,000
Total	550	8,130,571	7,022,440

Foreign Statistics.

REFINED QUOTATIONS.

	Antwerp.	Bremen.	London.
Wed. Dec. 19,	20½@—	7.70	6⅞@7
Thur. " 20,	20¼@—	7.70	6⅝@6⅞
Fri. " 21,	19⅞@—	7.70	6⅝@6⅞
Sat. " 22,	19⅞@—	7.70	6⅝@6⅞
Mon. " 24,		Holiday	
Tues. " 25,		Holiday	

STOCKS, RECEIPTS AND SHIPMENTS.

The statistical situation at the seven principal continental ports on December 8, was:

	1888.	1887.
Stock, Dec. 8	459,855	405,543
Afloat "	220,392	196,083
Loading "	100,500	124,500
Total	780,747	727,026
Receipts Dec. 1 to Dec. 8	89,490	121,864
Rec'ts July 1, '88, to Dec. 8, '88	2,245,088	2,194,973
Shipments Dec. 1 to Dec. 8	140,864	110,033
Shp's July 1,'88, to Dec. 8,'88	2,154,832	2,300,069

At London the statistical situation on the same date was made up as follows:

	1888.	1887.
Stock, Dec. 8	116,302	106,212
Afloat "	47,268	52,600
Loading "	24,500	42,100
Total	188,070	200,912
Receipts Dec. 1 to Dec. 8	14,000	26,327
Rec's July 1,'88, to Dec. 8, '88	345,276	383,821
Shipments Dec. 1 to Dec. 8	29,573	25,377
Shp'ts July 1,'88, to Dec. 8, '88	362,860	378,622

Petroleum Charters.

Following is a list of vessels chartered and loading or to load petroleum at New York, Philadelphia, Baltimore and Boston:

NEW YORK.	Bbls. Refd.
July 24	
It bk Plinio, Java, p t....cs	45,000
July 28	
Aus bk Leonora, China sea, p t....cs	55,000
Br sh Cumberland, U K or Cont, p t....	9,500
Aug 7	
Br bk John Trahey, Antwerp, Rotterdam or Amsterdam, 3s 7½d....	7,600
Aug 10	
It bk GemmaC, Java, p t....cs	28,000
Aug 20	
Nor bk Alsen, Baltic, 3s 10½d....	3,000
Sept. 4.	
Nor bk Java, Baltic, 4s 4½d....	3,000
Br sh Prinz Rudolph, Hamburg, 3s 9d..	8,500
Sept 9	
Nor bk Simeon, Java, 30@31c.... ...cs	26,000
Am sh Lucy A Nickels, Japan, p t....cs	46,000
Sept 13	
Nor bk Orvilla, Dieppe, pt....cde	6,500
Sept 14	
Dtch bk Carmdia, Continent, pt....	3,000
Sept 27	
It bk Chiarcana, Cette, 4s 10½d....cde	4,000
Nor bk K Langaard, U K or Cont, pt	4,000
Sept 28	
Br sh Sapphire, U K or Cont, p t....	8,500
Br str Salerno, Rouen, 4s 9d....cde	6,000
Oct 1	
Nor bk Grundloven, Baltic, p t....	4,800
Oct 2	
Am sch Anna, Buenos Ayres, 27c....cs	15,000
Oct 3	
Nor bk Marie, U K, p t....	4,000
Br bk J Throop, London, 4s....nap 5,000 &	1,300
Am bk Cardenas, Bristol Channel, p t....	2,400
Nor bk Artemis, U K or Cont, p t	3,500
Oct 10	
Nor bk Askoy, U K, 4s 3d....	3,000
Oct 15	
Nor bk Omen, U K, pt....	3,000
Oct 17	
Nor sh Signal, U K or Cont, 4s 1½d....	6,000
Oct 19.	
Sp bk Talolia, Marseilles, p t....cs	30,000
Oct 23	
Br shp Vanios, Havre, 4s 6d....cde	10,000
Br shp Pythomene, Calcutta, pt....cs	75,000
Br shp Gilcreux, Calcutta, pt....cs	90,000
Br bk Sophia Joakim, Chittagong, pt...cs	35,000
Oct 25	
Br shp Rossignal, London or Liverpool, pt....	9,000
It bk Maccabeo, Java, pt....cs	30,000
Br shp Main, Calcutta, pt....cs	60,000
Oct 26	
Dtch bk Martina Johanna, UKor Cont, pt	5,000
Oct 29	
Br shp Sultan, Calcutta, 33c....cs	60,000
Oct 30	
Nor bk Beta, U K or Cont, p t....	5,800
Am sh Evporter, Calcutta, p t....cs	47,000
Am sh Isaac S Skolfield, Calcutta, pt...cs	50,000
Dan bk Anna, Montevideo, p t....cs	11,000
Oct 31	
Am sh El Capitan, Calcutta, pt....cs	50,000
Nov 7	
Nor bk Cleveland, Bordeaux, 4s 4½d.cde	8,000
Nov 9	
Am ship Geo K Skolfield, Calcutta, p t.cs	60,000
Br ship Argonant, Calcutta, p t....cs	58,000
Nov 12	
Br ship New City, Calcutta, 31c....cs	60,000
Br ship Ingomar, Calcutta, p t....cs	45,000
Br str Waverly, Calcutta, 36c....cs	65,00
Nov 13	
It sh Melchiore, Java, pt.... ....cs	35,000
Nov 14	
Br sh Dunstaffnage, Shanghai, 46c. ...cs	40,000
Nov 15	
Fr sh Rhine, Ghent, 4s....	7,000
Nov 16	
Dan bk Nanon, Malacca Islands, pt...cs	11,000
Nov 17	
Br sh Kilmory, Calcutta, 31c....cs	50,000
Nov 19	
It bk Nuovo Eleonora Madra, Java, pt..cs	30.000
Nov 20	
Nor bk Freya, French port, p t.... ...cde	3,500
Br sh Dunvegan, Java, p t....cs	35,000
Nov 21	
Br bk Nouma Loa, Saigon, 40c....cs	40,000
Br bk Newburg, Montevideo, p t .....cs	13,000
It bk Noa, Java, p t....cs	18,000
Nov 23	
Ger bk Von Berg, Plymouth, 4s 1½d....	4,000
Nov 26	
It bk Gin, Java, 42c....cs	40,000
Nov 27	
Am sh C of Philadelphia, Calcutta, p t.cs	50,000
Dtch bk Amicitia, Java, 40c....cs	38,500
Nov 28	
Dtch bk Tjerimai, Java, p t.... cs	40,000
Ger bk Moewe, Java, p t.... .. .cs	40,000
Dec 1	
Ger sh Alice, Continent, p t....	10,000
Am sh Hamilton Fish, Continent, 4s....	9,300
Dec 3	
Br bk Laura Emily, Dunkirk, 4s 9d...cde	4,400
Am sh Agenor, Hong Kong, 40c....cs	55,000
Ger sh Friedlander, L'don or L'pool, p t.	10,000
Br bk Garfield, Calcutta, p t....cs	45,000
Dec 4	
Br shp Hallaerda, Hong Kong, 40c....cs.	45,000
Br shp Constance, Hong Kong, 40c. . cs	60,000
Ger shp Else, Continent, pt....	8,500
Dec 5	
Br shp Garfield, Calcutta, 25c....cs	90,000
Dec 7	
It shp Plinio, Java, pt ....cs	30,000
Nor bk Artemis, French port, pt....cde	3,200
Dec 8	
Nor bk Inga, Dutch port, pt, 4s 3d.... ...	6,500
Dec 10	
Br str Nova Scotia, U K or Cont, 4s 3d....	7,000
It bk Gemma C, Java, pt.. .. ....cs	35,000
Br shp Mary L Burrill, Havre, 4s 6d..cde	9,000
It bk Fratelli Doge, Medtterranean, pt.cs	25,000
It bk Gin, Java, 42c.... ....cs	40,000
Aus bk Hitar, Medit, pt.... ....cs	18,000
Br bk Galatea, Antwerp, p	8,000
Dec 11	
Belg shp Hainault, Antwerp, o's acc ....tank	16,000
Br shp Clan Robertson, Shanghai, 47c, cs	60,000
Br str Spendthrift, Japan, p t.... ....cs	90,000
Am Shp W W Crapo, Japan, p t.... ....cs	60,000
Dec 13	
Br bk Patsgonia, Calcutta, 40c....cs	45,000
Br shp City Camp, Blaye, 5s.... .. ..cde	6,000
Dec 14	
Am shp Thos Dana, Japan, 40c....cs	50,000
Br shp Ingomar, Calcutta, 32c....cs	46,000
Br shp Rhoderick Dhu, Calcutta. 30c..cs	60,000
Ger shp Black Hawk, Continent, p t....	6,500
Dec 17	
Br bk Privateer, Dieppe, p t ....cde	5,500
Ger shp Mommsen, Continent, p t....cde	7,500
It bk Giacomo Accame, Java, p t....cs	25,000
Br bk Demstaffnage, Shanghai, p t... cs	30,000
Am sch Isaac Burbee, St Catharines, 40c.. .... cs	7,000
Dec 18	
Nor sh Bernadotte, U K or Cont, p t ...	9,800
It bk M Gaiatola, Pozzuoli, 4s 10½d....	2,400
Dec 19	
Br bk Lynnwood, London, 4s 3d & 4s 4½d .. ....nap	5,000 & 2,000
Nor bk Grundloven, Baltic, p t....	5,000
Br sh Lord Lytton, U K, p t....	8,000
Ger bk Laura and Gertrude, Bremen, p t.... ....nap	6,500
Dec 20	
Br bk Sarah Chambers, U K or Cont, p t.	6,000
Aus bk Hitar, Port de Bouc, 6s 3d....nap	3,000
Br sh S D Horton, Calcutta, 34c ....cs	60,000
Dec 21	
Br str St Bernard, Liverpool, 4s....	11,000
Am sh City of Montreal, Cette, 5s....cde	7,000
It bk Maccabeo, Java, p t....cs	32,000
Br str Connemara, China or Japan, p t.cs	50,000
Br str Euphrates, Japan, p t....cs	50,000
PHILADELPHIA	
Aug 28	
Nor bk Ariadne, Baltic, p t....	4,500
Sept 29	
It bk Selina Stanford, Cagliari, fo,27c, cs	13,000
Oct 5	
Aus bk Alice, Medit or Adriatic, p t...cs	25,000
Oct 18	
Ger ship Union, Continent, pt....	7,000
Oct 19	
Am bk Mary T Kimball, Medit, pt....	18,000
Oct 20	
Br bk Linewood, Batavia, f o, pt....cs	42,000
Ger bk Grauif, Baltic, pt....	3,000
Oct 22	
Am shp The Lord Warden, Marseilles, pt ....cde	8,000
Oct 25.	
It bk Antoinetta, Accame, Medit, p t cs	18,000
It bk Luigi, Accame, Medit, p t....cs	30,000
It bk Castello Dragone, Medit, p t ....cs	25,000
Nov 3	
Nor bk Einar, Nordenhamm, pt....cde	5,500
Nor bk Hanonal, Continent, pt....	1,800
It bk Armonia, Java, pt.... ....cs	35,000
Nov 7	
Am bk Adolph Obig, Japan, p t....cs	50,000
Nov 8	
Br bk H B Cann, Japan, p t.... ....cs	40,000
Nov 15	
Ger str Frifels, Japan, 52&53c... ....cs	90,000
Nov 20	
Br sh N B Lewis, Java, pt.. ....cs	45,000
Nov 22	
It bk Natale Gallino, Medit, pt....cs	35,000
Nov 28	
Br sh Genesta, Calcutta, p t....cs	70,000
Dec 3	
Br str R F Matthews, Gibraltar, f o, pt cs	65,000
Dec 6	
It bk Luigia Accame, Havre, 4s 9d....cde	6,000
Dec 8	
It bk Nord America, Volo, 33c....cs	20,000
Am bk Mary G Reed, Dunkirk, 3s 6d and £15.... ....cde	3,000
Dec 12	
Dan brg Haabet, Copenhagen, 5s....	1,400
Dec 13	
Br bk Mary Ann, U K, 5s....	1,500
Nor bk Ilos, Continent, p t....	4,000
Rus bk Svea, Bremen, p t....nap	5,000
Dec 15	
Dtch bk Hendrick Robert Leemhuis, Rotterdam or Amsterdam, 4s 6d, or Harlington, 4s 9d	1,500
Dec 17	
Nor bk Karsten Longaard, U K or Cont, p t.... ....cde	4,000
Dec 22	
Ger str Oevelgoenne, H'burg, o's acc. tank	25.000
Dec 18	
Br sh Ben Nevis, Japan, p t....cs	40,000
Dec 20	
Nor bk Alexandra, U K or Cont, p t.... .	6,000
BALTIMORE	
Oct 16	
Ger shp Agra, Hamburg, 4s 3d..	6,500
BOSTON	
Nor bk Hardi, Baltic, 4s 6d....	2,000
Nor bk Respit, Norwegian port, 4s... .	3,000

Clearances of Petroleum.

Following are the clearances of petroleum from the ports of New York, Philadelphia, Baltimore, Boston and San Francisco on the dates named. Refined, unless otherwise specified:—

NEW YORK.

Dec. 14

Am bg Minnie Abbe, Georgetown, 500 cs

Dec 18

Am bk Anita Berwind, Buenos Ayres, 10,000 cs
Am bk A C Dickerman, Buenos Ayres, 5,000 cs
Br sh General Domville, Melbourne, 6,700 cs
Br bk Mary Fraser, London, 7,900 bbls
Br bk J L Pendergast, Lisbon, 2,000 cs, 320 bbls
Br bk J L Pendergast, Cadiz, 5,000 cs
Swed bk Arab Steed, Dublin, 4,115 bbls

Dec 19

Am sch Grace F. Littleton, Pto Bello. 330 cs
Am sh Luzon, Hong Kong, 49,280 cs
Am sch Wm H Jones, Pt au Prince, 2 pgs
Br str Orinoco, Hamilton, 36 bbls
Br sch Nellie Bruce, St John N B. 890 bbls and 11 bbls nap

Dec 20

Am sch Cora J McKay, St Thomas, 296 cs
Am str Colon, Callao, 32 cs
Am str Colon, Panama, 200 cs
Am str Colon, Amapala, 27 cs
Am str Colon, Colon, 24 cs
Am sch John R Bergen, Havana, 2,200 bbls cde
Am sch Addie G Bryant, Pt a Pitre, 1,000 cs
Am str Finance, Maranham. 15 cs
Br bk Curacao, Williamstadt, 345c s, 75 bbls

Dec. 21

Am sch Drisko, New Amsterdam. 500 cs
Am bk Mendoza, Havana, 17,000 cs, 6 dms and 2,600 gls in bulk, cde
Am sch F G French, Baracoa, 50 cs, 5 bbls
Ger sh Carl, Hamburg, 8,367 bbls

Dec 22

Am bg Ruby, Pt a Pitre, 500 cs
Am sch S S Bickmore, Pt a Pitre, 5 cs
Am sh Agenor, Hong Kong, 52,350 cs
Br str Cairngorm, Curacao, 500 cs
Br str Cairngorm, Maracaibo, 222 cs
Br str Camerata, Mayaguez, 45 cs
Br str Camerata, Humacas, 1,150 cs
Br str Camerata, St Johns, 750 cs
Br sch Isaac Burpee, St Catharina, 5,400 cs
Br sh Sultan, Calcutta, 51,476 cs
Br sch Frank & Willie, St John, N B, 280 cs
Br bg Lantana, Bahia, 6,384 cs
Br bk Sherwood, Buenos Ayres, 17,000 cs
Br bk Sherwood, Montevideo, 18,108 cs
Ger str Oevelgonne, Hamburg, 1,200,000 gls

BOSTON

Dec 18

Str Yarmouth, Yarmouth, 16 bbls

Dec. 19

Sch L S Swift, Cayenne, 90 bbls

Dec 21

Sch Mary Sprague, Trinidad, 150 cs
Str Halifax, Sydney etc 3 bbls
Sch Hebe, St Johns, 25 bbls
Sch Wallula, St Johns, 80 bbls
Sch Alice, Bridgewater, 13 bbls

SAN FRANCISCO

Dec 5

Constitution, Apia, 125 cs

PHILADELPHIA.

Dec. 15

It bk Oreb, Genoa, 29,400 cs
Br sh Marabout, Bristol, 9,527 bbls
It bk Natale, Gallino, 32,791 cs
Nor bk Poseiden, Dublin, 3,300 bbls

Dec 19

It bk Andria Lo Vico, Palermo, 21,322 cs
It bk Maria Luigia, Palermo, 21,810 cs

Imports of Empty Petroleum Barrels.

NEW YORK

7,493, G Heye, Galatea, Hamburg
6,400, G Heye, Nova Scotia, Rotterdam
1,522, G Heye, Black Hawk, Hamburg
55, R Smith, Mexico, Havana
580, F D, Mommsen, Hamburg
1,050, G Heye, L City, Bristol
1,242, G Heye, L City, Swansea
3,800, G Heye, Laura Gertrude, Stettin

PHILADELPHIA

3,794, E P Cooper, Minnesota, London
3,660, H R Shultz, Lord O'Neil, L'pool
2,310, E P Cooper; Karsten Langaard, Stettin
2,125, E P Cooper, Lansdowne, L'pool
1,062, E P Cooper, Maryland, L'pool

BOSTON

150, F L Clements & Co, Yarmouth, Yarmouth
1,700, J R Smith, Sarah, Fayal

Sealed proposals, subject to usual conditions will be received at the Quartermaster's office at Washiugton until 11 o'clock A. M., Tuesday, January 15, 1889, for furnishing and delivering mineral oil.

The usual holiday jollification was indulged in by the festive brokers on the Consolidated Exchange on Monday. The Twelfth Regiment band furnished the music.

The "boys" who frequent the pit would like to know what Theodore thinks of hustling.

The hat business ought to be brisk until the new year. The "boys" on the Consolidated did their best on Monday to give the hat business a boom.

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IMPORTS ENTERED AT NEW YORK FOR CONSUMPTION.

ACID—9 cs, W H Scheffelin & Co, City of Chicago, L'pool
CARB—21 cs, Schering & G, Rhaetia, Hamburg
CITRIC—20 kgs, Erin, London
OXALIC—63 cks, J L & D S Riker, Llandaff City, Swansea
PHOSPHORIC—2 cs, 440lb, Lehn & Fink, Rhaetia, H'burg
PICRIC—30 cs, A Klipstein, L Ontario, L'pool
PYRO—6 cs, Schering & G, Rhaetia, Hamburg
SAL—7 cs, Schering & G, Rhaetia, Hamburg
13 bbls, Schulze-Berge & K, Belgenland, Antwerp
ACONITE ROOT 4 bls, J Clay, Rotterdam, Rotterd am
ALBUMEN—8 cks, 2,586lb, A Klipstein, La Bourgogne, Havre
92 bgs, Alpers & Mott, Mommsen, Hamburg
25 cks, 5,500 lbs, Pickhardt & K, Rotterdam, R'dam
ALIZARINE—562 cks, 106,700lb, Pickhardt & K, Rotterdam, Rotterdam
ALKANET ROOT—16 bls, Lehn & Fink, Colorado, Hull
ALUM—20 bgs, 5,060lb, Pickhardt & K, Rotterdam, R'dam
ALOES—18 cs, 1,565lb, Rialto, London
ANILINE COLORS—4 cks, C Georgi, Trave, Bremen
2 cs, P H Karcher, La Bourgogne, Havre
25 cks & 1 cs, Sykes & S, La Bourgogne, Havre
52 pgs, E Schlbach, Penniand, Antwerp
9 pgs, J J Keller & Co, Penniand, Antwerp
10 cks, Davis, Wolt & Co, Rotterdam, R'dam
8 pgs, 810lb, Lutz & M, Lahn, Bremen
11 pgs, 1,400lb, Lutz & M, Polaria, H'burg
12 pgs, Schulze-Berge & K, Belgenland, Antwerp
SALTS—22 cks, Pickhardt & K, Penniand, Antwerp
ANNATTO—11 pgs, 2,178lb, A D Straus & Co Aguan, Kingston
ARCHIL—5 cks, 6,105lb, Banning, B & Co, Colorado, Hull
8 cks, 4,446lb, Tower Hill, London
ARGOLS—168 bgs, 23,056lb, N Y Tartar Co, La Bourgogne, Havre
6 bgs, F Bredt & Co, La Bourgogne, Havre
73 cks, N Y Tartar Co, Etruria, Liverpool
40 cks, 42,152lb, C Pfizer & Co, Rhaetia, H'burg
93 bgs, N Y Tartar Co, Spain, L'pool
66 cks, order, Trinacria, Leghorn
1 ck, 951lb, Loeb Bros, Furnessia, Glasgow
ARSENIC—93 cks, A Klipstein, La Bourgogne, Havre
ASPHALTUM—34 cks, D Rosenberg & Son, C of Chicago, L'p'l
278 bgs, 61,972lb, Suzarte & W, Saratoga, Havana
ASSAFOETIDA—69 cs; 20,149lb, R Hilliers' Son Co, Laura Emily, London
ALSAM COPAIBA—15 cs, 1,287lb, A A Stillwell, Colorado, Hul
75 cs, 1,975lb, Suzarte & W, Phila, Curacoa
27 cs, 2,060lb, G Amsinck & Co, Phila, Pto Cabello
TOLU—1 cs, Fritzsche Bros, Trave, Bremen
BARK—48 cs, 6,850lb, R Brueckner & Co, Colorado, Hull
BARYTES—253 cks, 253,912lb, Gabriel & S, Black Hawk, Bremen
BERRY EXT—35 cks, 6,769lb, Schulze-Berge & K, Penniand, Antwerp
BLEACH—48 cks, 56,906lb, Wing & E, Cufic, L'pool
25 cks, 25,806lb, Wing & E, Lepanto, Hull
340 cks, 449,528lb, Wing & E, St Ronans, L'pool
103 cks, 111,984lb, J Lee & Co, Lepanto, Newcastle
BONE BLACK—20 cks, J W Binney, Lepanto, Hull
BRONZE POWDER—1 cs, L Wallace, Trave, Bremen
12 cs, J Marsching & Co, Trave, Bremen
25 cs, T Reissner, Trave, Bremen
2 cs, J Marsching & Co, Rhaetia, Hamburg
6 cs, Fuchs & Lang, Rhaetia, Hamburg
BUCKTHORN BARK—43 bls, R Hillier's Son Co, Etruria, L'p'l
CACAO BUTTER—12 bgs, F Paulsen & Co, Rotterdam, R'dam
49 bgs, F Paulsen & Co, P Caland, Rotterdam
51 cs, Edam, Rotterdam
CANARY SEED—200 bgs, R D Florez & Co, Armonia, Cadiz
270 bgs, 27,528lb, Schulz & R, Alesia, Marseilles
1,150 bgs, 298,755lb, Germanic, L'pool
26 bbls, Kugelman & Co, Australia, Gibraltar
CANTHARIDES—1 cs, J Clay, Colorado, Hull
CARAMEL—6 cs, A Schoeverling, Rhaetia, Hamburg
25 cks, 22,411lb, Volturno, London
CARAWAY SEED—65 bls, 10,200lb, Holland, London
250 bgs, 30,000lb, Rosenstein Bros, Edam, Rotterdam
CARDAMOMS—8 cs, 674lb, J Clay, Lydian Monarch, London
CASTOR BEANS—252 bgs, Mason, Chapin & Co, Finance, Rio Janeiro
20 bgs, M B Snively, Finance, Rio Janeiro
CELERY SEED—30 bls, 6,950lb, Devonia, Glasgow
CEMENT—840 bbls, Batjer & M, Rhaetia, Hamburg
500 cks, C J Stevens, Helvetia, London
1,100 bbls, Berends & T, Laura & G, Stettin
500 cks, C J Stevens, Lydian Monarch, London
1,100 bbls, J W Binney, Kedron, London
CHALK—800 tons, F G Brown, Laura Emily, London
445 tons, Sanderson & Son, L Monarch, London
CHAMOIS—1 cs, J S Rockwell & Co, Etruria, L'pool
1 cs, T L Lutkins, La Bourgogne, Havre
CHAMOMILE FLOWERS—4 bls, 221lb, J Clay, Rotterdam, Rotterdam
3 cs, 605lb, J Clay, Colorado, Hull
CHEMICALS—10 cs, McKesson & R, Rhaetia, Hamburg
1 cs, W H Schieffelin & Co, Trave, Bremen
7 pgs, McKesson & R, Colorado, Hull
4 cs, L Bernhard & Co, La Bourgogne, Havre
23 cs, W H Schieffelin & Co, Penniand, Antwerp
4 cs, Schering & Glatz, Rhaetia, Hamburg
20 cs, Roessler & H, DeHuyter, Hamburg
5 cks, 2,345lb, Pickhardt & K, Rotterdam, R'dam
23 pgs, Lehn & Fink, Rotterdam, R'dam
2 cs, W H Schieffelin & Co, Rhaetia, Hamburg
9 cs, 333lb, Lehn & Fink, Rhaetia, Hamburg
20 pgs, Lutz & M, Lahn, Bremen
12 pgs, Schulze, Berge & K, Belgenland, Antwerp
CHINA CLAY—550 tons, G Knowles, I Due Fratelli, Plymouth
200 tons, G Knowles, Rosalia, Plymouth
CINCHONA BARK—62 bls, 18,221lb, Bothnia, Liverpool
CLIFFSTONE—239 tons, Sanderson & Son, Colorado, Hull
CLOVES—100 pgs, City of Chester, Liverpool
60 bls, 9,019lb, Holland, London
COAL TAR COLORS—1 ck, 411lb Alpers & M, L Ontario, L'pool
1 cs, P H Karcher, La Bourgogne, Havre
65 pgs, Pickhardt & K, Rotterdam, R'dam
COCA LEAVES—17 bls, G Amsinck & Co, C of Para, Aspinwall
12 bls, 1,667lb, W R Grace & Co, Colon, Aspinwall
COCHINEAL—84 bgs, Beach & Co, Britannic, L'pool
32 bgs, Beach & Co, Spain, L'pool
COLLODION—1 cs, Schering & G, Rhaetia, Hamburg
COLOCYNTH—10 cs, 1,985lb, J Clay, Colorado, Hull
COLORS—5 bbls, Fuchs & Lang, Penniand, Antwerp
1 cs, H Kohnstamm & Co, La Bourgogne, Havre
18 cks, Pickhardt & K, Rotterdam, R'dam
100 cks & 1 cs, W B Cooper, Jr, Rotterdam, R'dam
5 cks, Standard Oil Co, Rotterdam, Rotterdam
CORKS—44 bls, Kugelman & Co, Australia, Gibralter
CORKWOOD—705 bls, Brown Bros & Co, C of Montreal, Lisbon
COTTONSEED OIL—11 bbls, 550 gls, Marcial & Co, Finance, St Thomas
DANDELION ROOT—22 bls, 2,960lb, McKesson & R, Colorado, Hull
17 bls, 3,516lb, J Clay, Rotterdam, Rotterdam
DROP BLACK—10 kgs, 1,000lb, R J Waddell & Co, Colorado Hull
DRUGS—10 bls, 1,760lb, McKesson & R, Colorado, Hull
7 bls, Dodge & O, Finance, St Thomas
3 bls, 286lb, Lehn & Fink, Rotterdam, Rotterdam
18 pgs, 7,950lb, Lehn & Fink, Rhaetia, Hamburg
19 bls, 2,492lb, J Clay, Rotterdam, Rotterdam
37 pgs, J Clay, Colorado, Hull
17 bls, J Clay, L Monarch, London
DUTCH METAL—1 cs, Hensel B & L, Trave, Bremen
1 cs, J Marsching & Co, Rhaetia, Hamburg
4 cs, Fuchs & Lang, Rhaetia, Hamburg
DYEWOOD EXT—74 cks, Sykes & S, Colorado, Hull
ERGOT—15 cks, Dodge & O, L Monarch, London
FENNEL SEED—5 bls, 1,100lb, R Brueckner & Co, Colorado, Hull
10 bls, 2,205lb, Stallman & F, Rhaetia, Hamburg
FISH SOUNDS—3 cs, H Witte, T Hill, London
27 bls, Schering & G, Rhaetia, Hamburg
2 bgs, 276lb, Suzarte & W, Phila, Curacoa
FLOCKS—2 bls, H Kohnstamm & Co, La Bourgogne, Havre
FLOWERS—20 bls, 2,588lb, McKesson & R, Colorado, Hull
14 bls, R Hilliers Son & Co, Etruria, Liverpool
40 bls, 8,721lb, R F Downing & Co, Alesia, Marseilles
FULLERS EARTH—250 bgs, Hammill & G, C of Chicago, L'pool
100 bgs, 22,400lb, Brooklyn City, Bristol
FUSTIC—426 pcs, 34,760lb J Menendez & Co, C H Fabens, N'vis

767 pcs, J Menendez & Co, Akbur, Nuevitas
231 pcs, Lyon & Co, Saratoga, Havana
GELATINE—10 cs, 996lb, R Brueckner & Co, Colorado, Hull
1 cs, Schering & G, Rhaetia, Hamburg
17 pgs, 3,648lb, Lutz & M, Polaria, Hamburg
GINGER—157 bgs, Nubian, Cochin
5 bbls, Denmark, Loudon
1,833 bgs, Volturno, London
GLASS CATHEDRAL—36 cs, 18,656lb, Vanhorn, G & Co, Furnessia, Glasgow
PLATE—26 cs, 8,896 ft, H H Cahn, Pennland, Antwerp
3 cs, 842 ft, A Von Praag & Co, Pennland, Antwerp
19 cs, 8,774 ft, J A Waller, Britannic, L'pool
11 cs, 1,557 ft, J Zahn, Britannic, L'pool
2 cs, 685 ft, Sonweine & Co, Pennland, Antwerp
12 cs, 2,803 ft, S Bache & Co, Pennland, Antwerp
19 cs, 5,383 ft, J Zahn, Pennland, Antwerp
2 cs, 984 ft, J Zahn, Trave, Bremen
4 cs, A Von Praag & Co, De Ruyter, Antwerp
15 cs, 7,920 ft, S Bache & Co, Furnessia, Glasgow
6 cs, 1,549 ft, Elbe, Bremen
6 cs, 351 ft, Westernland, Antwerp
WINDOW—1,239 cs, 75,810lb, T W Morris & Co. Pennland Antwerp
2,053 cs, 114,770lb, A Von Praag & Co, Pennland, A'werp
106 cs, 8,480lb, T W Morris & Co, Britannic, L'pool
4,708 cs, 261,950lb, S Bache & Co, Pennland, Antwerp
463 cs, 24,660lb, Snyder & K, Pennland, Antwerp
3,265 cs, 202,260lb, J Eitzpatrick & Co, Pennland, A'w'p
295 cs, 22,400lb, J F Heyne, Pennland, Antwerp
1,075 cs, 53,250lb, Dougherty, E & M, De Ruyter, A'w'p
429 cs, 22,830lb, R Berg, De Ruyter, Antwerp
560 cs, 26,300lb, P Semmer G Co, Pennland, Antwerp
3,127 cs, 115,320lb, Rhynland, Antwerp
1,213 cs, 61,580lb, Westernland, Antwerp
295 cs, 9,552lb, Waesland, Antwerp
3,115 cs, 162,653lb, Perry & R, De Ruyter, Antwerp
GLUE—13 cks, B W Jones, Colorado, Hull
15 cs, S Isaacs & Co, Santiago, Hull
26 pgs, L De Jonge & Co, Rotterdam, Rotterdam
92 bgs, A K Gardiner & Bro, L City, Swansea
8 bls, Perry & R, De Ruyter, Antwerp
GLYCERINE CDE—72 dms, 72,231lb, L Straus & Co, La Bourgogne, Havre
20 cks, 21,788lb, Gallia, L'pool
REFINED—10 cs, Schering & G, Rhaetia, Hamburg
GREASE—148 cks, A L Knight, Colorado, Hull
64 bbls, Borne, Scrymser & Co, Colorado, Hull
20 cks, E B Menut & Co, La Bourgogne, Havre
20 cks, Bittel, T & E, Rotterdam, Rottordam
40 cks, J D Weltz, Helvetia, London
500 bbls, A P Moore, Helvetia, London
59 cks, Waesland, Antwerp
25 bbls, 9,200lb, Black Hawk. Hamburg
GUARANA—6 cs, G Amsinck & Co, Basil, Para
GUM CHICLE—70 bgs, H A Forrest & Co, C of Washington, Vera Cruz
27 bgs, P Harmony's Nephew & Co, C of Washington Vera Cruz
82 bgs, 16,100lb, L Monjo Jr, & Co, C of Wash, Vera C'z
455 bgs, 82,786lb, J W Wilson & Co, C of Wash, Tuxpan
ARABIC—10 cs, 2,328lb, Rialto, London
26 cs, Thurston & B, Alesia, Marseilles
GUIAC—2 cs, 200lb, Whitney, P & Co, Saginaw, Agua
HERBS—15 bls, 2,551lb, R Brueckner & Co, Colorado, Hull
HEMPSEED—300 bgs, 65,477lb, Alvah, Hamburg
700 bgs, 143,630lb, T Hill, London
HYDROLEINE—25 cks, W Downie, Etruria, Liverpool
56 cks, 16,247lb, W Downie, Colorado, Hull
INDIAN RED—75 kgs, 9,375lb, R J Waddell & Co, Colorado, Hull
INDIGO—7 ser, H B Claflin & Co, Colon, Aspinwall
2 ser, S Samper & Co, Colon, Aspinwall
17 ser, Munoz & E, Colon, Aspinwall
3 ser, J Baix, Aguan, Pto Cortez
10 ser, S Samper & Co, C of Para, Aspinwall
6 ser, Munoz & E, C of Para, Aspinwall
AUX—15 cks, 22,022lb, Schulze-B & K, Pennland, Antwerp
IODOL—21 cs, T Weicker, Rotterdam, R'dam
IPECAC—22 ser, Dodge & O, L Monarch, London
IRON OXIDE—5 pgs, 10,960lb, J S Lamson & Bro. Santiago, St Jago
45 bbls, A B Ansbacher & Co, Colorado, Hull
IRISH MOSS—28 bls, Italy, L'pool
IRON SULPH—2 ck, Lehn & Fink, Rotterdam, R'dam
JABORANDI LEAVES—3 bbls, 647lb, S Green, Basil, Para
KIESERIT—999 tons Kieserit in our last should be Kainit
LAVENDER FLOWERS—1 bbl, 198lb, D C Link, Alesia, Marseilles
LEAVES—54 bls, Victoria, Fiume
3 bls, 684lb, W H Schieffelin & Co, Alesia, Marseilles
LEECHES—4 cs, H Witte, La Bourgogne, Havre
LICORICE ROOT—12 bls, 4,250lb, R F Downing & Co, Alesia, Marseilles
LIME SULPH—10 pgs, 3,447lb, Lehn & Fink, Rotterdam, R'dam
LINSEED—1,365 bgs, 223,860lb, W B Cooper, Colorado, Hull
5,144 bgs, 858,376lb, J A Dean & Co, Colorado, Hull
2,598 bgs, Atlantic W L & L S O Co, Erin, London
LOGWOOD—12 tons, Lyons & Co, Saginaw, Aguan
67 tons, Markt & Co, Saginaw, St Domingo
400 tons, Jimenes, H & Co, Saginaw, St Domingo
42,500 lb, B de Sola & Co, Saginaw, St Domingo
362 tons, Minnie Abbe, Black River
250 tons, Geo Bird, St Domingo
MADDER—6 cks, DeLong Mayer, & Co, Rotterdam, R'dam
5 cks, E Hill's Son & Co, Rotterdam, Rotterdam
10 cks, 13,200lb, Schiedam, Rotterdam
5 cks, P Caland, Rotterdam
MANGANESE OXIDE—17 cks, J Lee & Co, S of Pennsylvania, Glasgow
2 cs, J C Niarda, Rhaetia, Hamburg
MANURE SALTS—3,000 bgs, H J Baker & Bro, Mommsen, H'g
1,000 bgs, 224,028lb, Heller, H & Co, Mommsen, H'burg
2,540 bgs, 525,400lb, W R Peters & Co, Mommsen, Hamburg
MENTHOL—1 cs, 60lb, Fritzsche Bros, Trave, Bremen
MORPHINE—1 cs, 5.000 ozs, L Englehorn, Etruria, Liverpool
MOSS—50 bls, 5,533lb, Stallman & F, Australia, Hamburg
MUSTARD SEED—100 bgs, Wolff & R, City of Berlin, L'pool
131 bgs, 20,079lb, Holland, London
262 bgs, 25,913lb, La Bretagne, Havre
OIL ALMOND—11 cs, La Bourgogne, Havre
BERGAMOT—4 cs, Dodge & O, Australia, Messina
CARAWAY—12 cs, 150lb, Fritzsche Bros, Trave, Bremen
COCOANUT—46 cks, Nubian, Pt Elizabeth
10 bbls, D C Link, Alesia, Marseilles
COD LIVER—100 bbls, Gellert, Hamburg
25 bbls, 750 gls Veendam, Rotterdam
CORIANDER—1 cs, 25lb, Fritzsche Bros, Trave, Bremen
DEAD—1,000 dms, 5,000 gls, J Smith, Colorado, Hull
ESS—2 cs, 22lb, Fritzsche Bros, Trave, Bremen
GERANIUM—1 cs, 33lb, La Bourgogne, Havre
JUNIPER—4 cs, 200lb, Fritzsche Bros, Trave, Bremen
LAVANDER—4 cs, La Bourgogne, Havre
LEMON—5 cs, Dodge & O, Australia, Messina
25 cs, W H Schieffelin & Co, Australia, Messina
LINSEED—10 cs, 298 gls, Denmark, London
MALEFERN—1 cs, 15lb, Fritzsche Bros, Trave, Bremen
NEROLI—1 cs, W H Schieffelin & Co, Alesia, Marseilles
3 cs, Dodge & O, L Monarch, London
OLIVE—16 bbls, J McBeth & Co, Devonia, Glasgow
2 bbls, J J Manuels, Alesia, Marseilles
ORANGE—25 cs, 550lb, Fritzsche Bros, Trave, Bremen
5 cs, Dodge & O, Australia, Messina
PALM—40 cks, 56,569lb, J Lee & Co, St Ronans, L'pool
PATCHOULY—1 cs, 11lb, La Bourgogne, Havre
POPPY—60 cks, John Lucas & Co, Pennland, Antwerp
RAPE—100 cks, 4,865 gls, W Warden & Son, Colorado, Hull
ROSEMARY—1 cs, 55lb, W H Schieffelin & Co, Alesia, M'l's
SANDALWOOD—3 cs, 110lb, Fritzsche Bros, Trave, Brem'n
SESAME—10 cks, 1,067lb, A Bougrand, Alesia, Marseilles
THYME—2 cs, 200lb, Fritzsche Bros, Trave, Bremen
3 cs, 330lb, W H Schieffelin & Co, Alesia, Marseilles
VANILLA—2 cs, 40lb, Fritzsche Bros, Trave, Bremen
WINTERGREEN—3 dms, 1,600lb, Fritzsche Bros, Trave, Bremen
ORANGE LEAD—50 cks, 39,305lb, A B Ansbacher & Co, Rotterdam, Rotterdam
PAINT—12 cks, A B Ansbacher & Co, Colorado, Hull
2 cs, T W Paton, L Monarch, London
PARAFFINE—1 cs, 55lb, Lehn & Fink, Rhaetia, Hamburg
PEPPER—40 bgs, 6,755lb, Helvetia, London
382 bgs, 54,977lb, Erin, London
PERFUME—1 cs, Park & T, La Bourgogne, Havre
9 cs, 608lb, Holland, London
7 cs, Erin, London
PHOSPHORUS—75 cs, Sanderson & Son, Colorado, Hull
PITCH, BURGUNDY—300 tubs, 22,050 lb, W H Schieffelin & Co Rotterdam, Rotterdam
PLUMBAGO—179 bbls, 112,303lb, Nubian, Colombo
POMADE—3 cs, 330lb, La Bourgogne, Havre
POPPY SEED—100 bgs, 17,078lb, Holland, London
POTASH BI-CHRO—101 cks, J L & D S Riker, Etruria, L'pool
CARB—10 cks, 7,467lb, Davis, Wolt & Co, C of Chicago Liverpool
28 cks, J A & W Bird & Co, De Ruyter, Antwerp
CHLO—300 cks, Pickhardt & K, Rotterdam, Rotterdam
HYDRATE—30 cks, A Klipstein, Rotterdam, Rotterdam
MURI—471 bgs, W R Peters & Co, Colorado, Hull
927 bgs, 228,034lb, Marteilo, Hull
2,500 bgs, 557,970lb, H H Salmon & Co, Australia, H'b'g
PRUSS—10 cks, 5,501lb, D A Griffin, Australia, Hamburg
2 cs, 440lb, Lehn & Fink, Rhaetia, Hamburg
20 cs, 12,001lb, Ethiopia, Glasgow
SULPH—5,120 bgs, 1,120,228lb, Heller, H & Co, Privateer Stettin
506 bgs, 111,700lb, W R Peters & Co, Mommsen, H'burg
PURPLE OXIDE—15 kgs, 1,875lb, R J Waddell & Co, Colorado Hull
QUILLAYA BARK—20 bls, Lehn & Fink, Colorado, Hull
QUININE—16 cs, 8,000 ozs, J L & D S Riker, Trave, Bremen
RAPESEED—100 bgs, France, London
RED LEAD—31 cks, 22,000lb, Pickhardt & K, Rotterdam, R'dam
62 cks, 43,244lb, E Schibach & Co, Rotterdam, R'dam
10 cks, 16,244lb, Wing & Evans, Cuflc, L'pool
ROOTS—805 bls, Nubian, Pt Elizabeth
140 bls, 28,000lb, Nubian, Cochin
ROSE LEAVES—13 bls, 3,718lb, Leo Bernard & Co, Erin, L'don
10 bls, 1,109lb, D C Link, Alesia, Marseilles
ROSE WATER—10 cs, H Maillard, La Bourgogne, Havre
52 pgs, W H Schieffelin & Co, Alesia, Marseilles
ROTTENSTONE—69 cks, Brooklyn City, Swansea
SAGE—58 bls, 27,412lb, Victoria, Fiume
SAGO—80 bgs, Levy & Levis, Rotterdam, Rotterdam
SALT CAKE—34 cks, 56,057lb, J Lee & Co, St Ronans, L'pool
SARSAPARILLA—42 bls, 8,111lb, J W Wilson & Co, C of Washington, Tuxpan
5 bls, Lyon & Co, Saratoga, Havana
SENNA—150 bls, 47,079lb, Denmark, London
SHELLAC—100 cs, France, London
SIENNA—24 cks, G W Sheldon & Co, Santiago, Hull
SOAP CASTILE—140 cs, Lehn & Fink, Etruria, Glasgow
21 cs, Victoria, Fiume
SODA ASH—33 cks, 50,406lb, The Queen, L'pool
909 cks, 1,543,257lb, Wing & Evans, Cuflc, L'pool
123 cks, 212,229lb, Wing & Evans, L Winnipeg, L'pool
236 cks, 336,501lb, J Lee & Co, Lepanto, Newcastle
BICH—123 cks, J L & D S Riker, Etruria, L'pool
CAUSTIC—250 pgs, 91,813lb, Davis, Wolt & Co, C of Chicago, Liverpool
300 dms, 195,000lb, E Hill's Son & Co, C of Chicago, L'p'l
141 dms, Adriatic, L'pool
300 dms, 174,108lb, T M Marc, Cuflc, L'pool
429 dms, 280,155lb, Wing & Evans, Lepanto, Newcastle
54 cks, 113,061lb, J Lee & Co, St Ronans, L'pool
SAL—375 cks, 168,000lb, Wing & Evans, Lepanto, Newcastle
250 cks, 112,000lb, Wing & Evans, Cuflc, L'pool
SPONGE—26 bls, Lebess Sponge Co, Saginaw, Turks Island
17 bls, A Isaacs & Co, Santiago, Nassau
29 bls, Leaker & B, Santiago, Nassau
ST JOHNS BREAD—100 bls, 21,560lb, Victoria, Fiume
5 cs, J H Westervelt & Co, Alesia, Marseilles
SUMAC—140 bgs, Leber & B, Bedford, Palermo
150 bgs, Stamford Mfg Co, Bedford, Palermo
260 bgs, Core & H, Bedford, Palermo
EXT—15 cks, Sykes & S, Colorado, Hull
22 pgs, P H Karcher, Victoria, Fiume
TURMERIC—196 bgs, 27,400lb, Nubian, Port Elizabeth
TUSCAN RED—5 cks, 2,551 bls, G A & E Meyer, Colorado, Hull
ULTRAMARINE—20 cks. Pickhardt & K, Rotterdam, R'dam
29 cks, W B Cooper Jr, Rotterdam, R'dam
UMBER—20 kgs, 2,560lb, H Kohnstamm & Co, La B'gogne, Hav'e
41 cks, W B Cooper Jr, Rotterdam, R'dam
14 cks, G W Sheldon & Co, Santiago, Hull
VANDYKE BROWN—7 cks, G W Sheldon & Co, Santiago, Hull
VANILLA BEANS—1 pg, H W Henning & Son, La Normandie, Havre
VENETIAN RED—300 cks, 60,000lb, R J Waddell & Co, Colorado, Hull
WHITE LEAD—5 cks, 3,400lb, Pickhardt & K, Rotterdam, R'm

PURE LOGWOOD EXTRACTS SOLID AND LIQUID. W. A. ROSS & BRO., 68 PINE ST., NEW YORK.

CARBONATE OF AMMONIA.
Chlorate of Potash.
Oxalic Acid.
Zinc Dust. (Indigo Auxiliary.)
Blood and Egg ALBUMEN.
ANILINE COLORS.

Schulze-Berge & Koechl,
75 PINE STREET, NEW YORK.
IMPORTERS OF CHEMICALS AND DYESTUFFS,
AND SOLE AGENTS FOR
Salol, pat'd, the new Antiseptic.
Made under License of the Patentees of Dr. F. v. Heyden, nachf. Radebeu.

MIRBANE OIL.
Pure Aniline Oil & Salt
SALICYLIC ACID.
Archil Extract.
Indigo Extract.
ALIZARINE.

ZINC OXIDE—200 bbls, 44,092lb, G A & E Meyer. DeRuyter, Antwerp
SULPH—3 cks, 2,079lb, Lehn & Fink, Rhaetia, Hamburg
20 cks, Santiago, Hull

WAREHOUSED.

ANILINE COLORS—36 pgs, Schlbach & Co, Penniand, Antw'p
BAY RUM—4 pgs, 325 gls, Paris A & Co, Finance, St Thomas
43 pgs, 2,321 gls, J W Roache, Finance, St Thomas
CACAO BUTTER—20 cs, H Martin, Etruria, L'pool
DYEWOOD EXT—30 cks, A Klipstein, Penniand, Antwerp
25 pgs, Sykes & S, Colorado, Hull
INDIGO EXT—5 cks, 3,396lb, Brown Bros & Co, Nevada, L'pool
LICORICE ROOT—5 bls, Republic, L'pool
OIL COD LIVER—75 bbls, Santiago, Hull
ESS—17 dms, Fritzsche Bros, Trave, Bremen
LINSEED—10 cs, 296 gls, Persian Monarch, London
OPIUM—5 cs, Stallman & F, Etruria, L'pool
4 cs, Alaska, L'pool
25 cs, Paddock & F, Alaska, L'pool
16 cs, France, London
PAINT—202 cks, 12,332lb, Westerniand, Antwerp
POPPY SEED—125 bgs, 13,778lb, T Hill, London
125 bgs, 13,378lb, Buffalo, Hull
POTASH—15 cks, 22,129lb, G de Metz, Waesland, Antwerp
CAUSTIC—25 dms, 13,739lb, G de Metz, Waesland, Antwerp
RAPE SEED—295 bgs, 66,077lb, Victoria, Fiume
SOAP CASTILE—250 bxs, 9,200lb, France, London
SODA CAUSTIC—50 dms, 35,492 lb, Davis, Wolt & Co, City of Chicago, Liverpool
SPONGE—75 bls, Lasker & B, Santiago, Nassau
60 bls, Lebess S Co, Santiago, Nassau
55 bls, Mansell & B, Santiago, Nassau
77 bls, A Isaacs & Co, Santiago, Nassau
31 cs, Park & T, Aurania, L'pool
SUMAC EXT—10 cks, Sykes & S, Colorado, Hull
ULTRAMARINE—34 cks, Pickhardt & K, Penniand, Antwerp
VARNISH—1 ck, Helvetia, London
6 cts, France, London

IMPORTS AT CHICAGO.

Week ending Dec. 22, 1888.

BRISTLES—5 cs, Gerts, Lombard & Co
CEMENT—509 bgs, Gabain & Co
COLORS—3 cks, A H Abbott & Co
1 cs, Lubrig & Dietzgen
GLASS—3 cs, G W Sheldon & Co
GREASE—20 cks, order
OIL—9 cs, G W Sheldon & Co
PHOSPHATES—8 cars, N W Fertilizing Company
PITCH—67 bbls, G W Sheldon & Co
ROOTS—1 cs, Jacques, Atwood & Co
SEED—50 bgs, First National Bank
17 bgs, G W Sheldon & Co
14 bls, J C Vaughn
SOAP—4 cs, Sprague, Warner & Co
SODA CAUSTIC—150 dms, Geo R Jenkins & Co
45 dms, R Crooks & Co

IMPORTS AT NEW ORLEANS.

CEMENT—2,700 cks, Chelydra, London
GLASS—6 cs, Darien, Liverpool
MAGNESIA—7 pgs, Chelydra, Swansea
QUININE—10 cs, Chelydra, London

IMPORTS AT BALTIMORE.

GLASS CATHEDRAL—1 cs, order, Peruvian, Liverpool
WINDOW—127 pgs, Ripon City, Antwerp
SALTCAKE—203 cks. Mentmore, Liverpool
SOAP—19 bxs, J J Thomsen, Bothnia, Liverpool
SODA ASH—441 tcs, Mentmore, Liverpool
VALERIAN ROOT—10 bls, J J Thomsen, R City, Antwerp

IMPORTS AT BOSTON.

ANILINE SALTS—30 cks, order, Bostonian, L'pool
BLEACH—64 cks, Baring Bros & Co, Bostonian, L'pool
200 cks, order, Bostonian, L'pool
200 cks, Linder & M, Bostonian, L'pool
128 cks, Catalonia, L'pool
183 cks, Linder & M, Venetian, L'pool
BRIMSTONE—100 bbls, E & F King & Co, Bostonian, L'pool
67 bgs, order, Bostonian, L'pool
CEMENT—50 bbls, Catalonia, L'pool
CHAMOIS—1 cs, J A & W Bond & Co, Caledonia, L'pool
FISH SOUNDS—3 bbls, Manning & Co, Halifax, Halifax
2 bbls, De Long & S, Yarmouth, Yarmouth
GINGER—1,187 bgs, John F Brooks, St Croix, Sierra Leone
GLASS PLATE—10 cs, Hills, Turner & Co, Bostonian, L'pool
WINDOW—21 cs, Hills, Turner & Co, Bostonian, L'pool
10 cs, Rowan & K, Siberian, Glasgow
LOGWOOD—567,000lb, order, B Dickerman, Miragoane
433,000lb, J Stevens, J A Horsey, Miragoane
MAGNESIA CITRATE—22 cs, C C Goodwin & Co, Catalonia, L'pool
OIL SPERM—19 bbls, T Luce, Sarah, Fayal
20 bbls, J & W R King, Sarah, Fayal
PIMENTO—17 bgs, Boston F Co, Marmion, Pt Morant
POTASH CHLO—50 kgs, Linder & M, Venetian, L'pool
SOAP CASTILE—250 bbls, Weaver & Sterry, Catalonia, L'pool
SODA ASH—30 cks, Morey & Co, Bostonian, L'pool
211 cks & 1,000 bgs, Linder & M, Bostonian, L'pool
150 cks, Linder & M, Catalonia, L'pool
80 tcs, Catalonia, L'pool
173 cks & 1,000 bgs, Linder & M, Venetian, L'pool
CAUSTIC—150 dms, E & F King & Co, Bostonian, L'pool
200 dms, Linder & M, Bostonian, L'pool
200 dms, Linder & M, Venetian, L'pool
SAL—125 cks, Linder & M, Bost onion, L'pool

IMPORTS AT PHILADELPHIA.

ARSENIC—100 cks, A Klipstein, Maryland, London
BLEACH—48 cks, A Klipstein, British King, Liverpool
BARK—513 pgs, Powers & W, Maryland, London
CHALK—240 tons, F E Brugman & Co, Maryland, London
CEMENT—2,825 bbls, order, K Langaard, Stettin
CHEMICALS—55 cks, Chas Lennig & Co, Lansdowne, Liverpool
CHILLIES—25 bgs, A Malcolm, Maryland, London
DRUGS—50 bgs, French R & Co, Marryland, L'pool
DYEWOOD EXT—30 cks, Beach & Co, Maryland, London
GLASS WINDOW—750 cs, S Bache & Co, British King, L'pool
INDIGO AUX—9 cks, J M Sharpless & Co, Maryland, London
LINSEED—2,730 bgs, Baring Bros, Maryland, London
MANGANESE OXIDE—35 cks, 45,022 lb, J Lee & Co, Prussian, Glasgow
SOAP—15 cs, T T Dobson, Maryland, London
SODA ASH—210 cks, 341,454lb, Wing & E, British King, L'pool
803 cks, 1,420,454lb, Wing & E, Fansdowne, L'pool
CAUSTIC—100 dms, 64,400lb, Wing & E, Lord Lansdowne, Liverpool
206 dms, Fergusson Bros, Maryland, London
SAL—250 cks, 112,000lb, Wing & E, Lord Landsdowne, L'p'l

WITHDRAWALS FROM BOND.

Aniline colors, pgs	73
Bay rum, pgs	52
Cacao butter, pgs	20
Chemicals, cks	13
China clay, cks	60
Coal tar colors, pgs	32
Corks, bls	67
Glycerine ref, cs	10
Licorice Paste, cs	35
Matches, cs	35
Oil castor, cs	5
Oil camphor, cs	25
Oil cod liver, bbls	5
Oil geranium, cs	2
Opium, cs	37
Perfumery, cs	1
Potash carb, kgs	74
Potash pruss, cks	25
Rape seed, bgs	100
Red lead, cks	2
Saltpeter, bgs	699
Soda sal, cks	10
Sponges, pgs	43
Ultramarine, pgs	28

TOTAL DOMESTIC RECEIPTS.

FOR WEEK ENDING DECEMBER 24, 1888.

		For week.	Since Jan 1.
Alcohol	bbls.	465	25,880
Ashes	pkgs.	..	1,793
Beeswax	pkgs.	7	807
Borax	pkgs.	480	41,932
China clay	cks.	147	5,606
Cottonseed	bags.	..	5,913
Meal	bgs.	..	35,599
Cake	bgs.	..	72,016
Soap stock	bbls.	..	1,158
Flaxseed	bush.	..	224,144
Grease	pkgs.	587	40,671
High Wines	bbls.	1,202	58,811
Lead	pigs.	1,341	436,522
Mustard seed	bgs.	709	9,248
Oil, Cottonseed	bbls.	1,677	79,839
Lard	bbls.	60	6,410
Linseed	bbls.	..	....
Lubricating	bbls.	119	35,025
Cake	bags.	4,760	204,760
Oleo stock	pkgs.	220	17,024
Pitch	bbls.	90	3,243
Quicksilver	flks.	..	6,100
Rosin	bbls.	3,951	350,752
Stearine	pkgs.	33	6,965
Sumac	bags.	..	54,330
Tallow	pgs.	1,412	56,179
Tar	bbls.	1,387	29,609
Turpentine, crude	bbls.	112	2,097
Spirits	bbls.	1,228	92,113

NEW YORK DOMESTIC RECEIPTS

For week ending Dec. 24.

ALCOHOL—440 bbls, J A Webb, Penn RR
25 bbls, Boyd & Co, Penn RR
BEESWAX—4 pgs, forward, str, N O
1 pg, Belt & B, str, N O
1 bg, Belt & B, str, Richmond
1 pg, order, str, Richmond
BORAX—480 bgs, order, str, S F
CEMENT—192 pgs, order, str, S F
CLAY—33 cks, C B Barber, str, Charleston
92 cks, R McNrmee & Co, str, Charleston
12 cks, Sergeant Bros, str, Port Royal
GREASE—95 pgs, order, N R boats
3 pgs, order, Penn RR
70 pgs, order, Fowler Bros, H R RR
21 pgs, J H Welch, Penn RR
36 pgs, J Cinnamon, Balt Inland
80 pgs, J Cinnamon, D L & W RR
10 pgs, O M Scripture, H R RR
65 pgs, Welch, H & C, N R Boats
25 pgs, Chambers & Co, Penn RR
80 pgs, W J Bower, B & O RR
22 pgs, De Long & W, Penn RR
80 pgs, F G Brown, str, Richmond
HIGHWINES—195 bbls, J A Webb, Penn RR
159 bbls, Ross & K, Penn RR
325 bbls, Curtiss & Co, Penn RR
65 bbls, T B Kerr, Penn RR
280 bbls, G W Kidd, D L & W RR
198 bbls, J L Hasbrouck, D L & W RR
LEAD—63 pigs, order, Erie RR
1,248 pigs, order, str, S F
MUSTARD SEED—769 bgs, order, str, San F
OIL COTTONSEED—506 bbls, Am Oil Co, str Savannah
650 bbls, Am Oil Co, str, Richmond
34 bbls, Hopkins, D & Co, Penn RR
47 bbls, Hopkins, D & Co, str, New Orleans
440 bbls, So Oil Co, str, New Orleans
LARD—60 bbls, order, H R RR
LUB—39 bbls, order, C RR of N J
80 bbls, Moore & Co, C RR of N J
WHALE—19 bbls, forward, str, Brunswick
CAKE—300 pgs, Rogers, S & Co, Erie RR
1,776 pgs, I & C Moore & Co, Erie RR
527 pgs, I & C Moore & Co, Penn RR
106 pgs, I & C Moore & Co, D, L & W RR
240 pgs, I & C Moore & Co, H R RR
840 pgs, Weeks & Co, Erie RR
121 pgs, Weeks & Co, Penn RR
350 pgs, Gibbs & Co, H R RR
500 pgs, Simmonds & G, D, L & W RR
OLEO STOCK—70 pgs, J H Hartor, Penn RR
90 pgs, E Winter, Penn RR
60 pgs, H Webb, H R RR
PITCH—40 bbls, forward, str, Wilmington
50 bbls, order, str, Wilmington
ROSIN—126 bbls, F W Blossom, str, Savannah
167 bbls, F W Blossom, str, Richmond
400 bbls, Dutton & W, str, Savannah
400 bbls, Murchison & Co, str, Savannah
250 bbls, M W Larendon, str, Savannah
422 bbls, J Turton's Sons, str, Savannah
213 bbls, J Turton's Sons, str, Charleston
60 bbls, order, str, Savannah
4 bbls, forward, str, Savannah
34 bbls, G Potter & Co, str, Charleston
41 bbls, G Potter & Co, str, Wilmington
228 bbls, G Potter & Co, sch, Georgetown
56 bbls, G Potter & Co, str, Fernandina
70 bbls, Z Mills, str, Charleston
79 bbls, W H Wiggins, str, Charleston
145 bbls, W H Wiggins, sch, Georgetown
1,300 bbls, Tolar & H, sch, Georgetown
67 bbls, Tolar & H, str, Richmond
160 bbls, Paterson, D & Co, str, Richmond
129 bbls, G W Bailey & Co, str, Richmond
SAFFRON—103 bbls, Eggers & H, str, N O
STARCH—204 pgs, order, H R RR
1,210 pgs, order, Penn RR
STEARINE—20 pgs, H W Calef, Penn RR
13 pgs, H W Calef, C RR of N J
TALLOW—43 pgs, order, N R boats
48 pgs, order, Penn RR
18 pgs, order, H R RR
5 pgs order, D, L & W RR
4 pgs, order, N Y, O & W RR
8 pgs, order, L V RR
2 pgs, order, C RR of N J
23 pgs, C S Higgins, C RR of N J
98 pgs, H W Calef, N R boats
10 pgs, H W Calef, C RR of N J
75 pgs, H W Calef, str, Richmond
7 pgs, H W Calef, D, L & W RR
63 pgs, G H Williams & Co, H R RR
120 pgs, G H Williams & Co, B & O RR
75 pgs, G Vandenhove, H R RR
200 pgs, G Vandenhove, N Y, W S & B RR
20 pgs, G Vandenhove, N R boats
10 pgs, G Vandenhove, Penn RR
35 pgs, G Vandenhove, D, L & W RR
30 pgs, Colgate & Co, D, L & W RR
19 pgs, Welch, H & C, H R RR
325 pgs, G B Ferris & Co, D, L & W RR
100 pgs, Kuh & T, str, N O
17 pgs, Kuh & T, N Y, O & W RR
24 pgs, Kuh & T, N Y, W S & B RR
20 pgs, Kuh & T, L V RR
13 pgs, D T Brown, M RR of N J
TAR—775 bbls, order, str, Wilmington
500 bbls, forward, str, Wilmington
74 bbls, Z Mills, str, Richmond
38 bbls, A H Nast & Co, str, Richmond
TURPENTINE SPIRITS—10 bbls, forward, str, Savannah
45 bbls, forward, str, Wilmington
679 bbls, order, str, Wilmington
17 bbls, W H Wiggins, sch, Georgetown
76 bbls, G Potter & Co, sch, Georgetown
60 bbls, G Potter & Co, str, Fernandina
93 bbls, Tolar & H, sch, Georgetown
79 bbls, Tolar & H, str, Richmond
51 bbls, G W Bailey & Co, str, Richmond
120 bbls, Dutton & W, str, Savannah
CRUDE—25 bbls, forward, str, Wilmington
87 bbls, order, str, Wilmington

SAVANNAH DOMESTIC RECEIPTS

For week ending Dec 21.

BONES—3 cs, C & S RR
CLAY—86 cks, C RR
COTTONSEED—823 sks, Augusta
4 cars, C & S RR
11 cars, S, F & W RR
27 cars, C RR
9 sks, Fernandina
MEAL—1,500 sks, S, F & W RR
GUM—19 bbls, S, F & W RR
OIL COTTONSEED—300 bbls, C RR
PHOSPHATE—10 cars, C & S RR
ROSIN—324 bbls, C & S RR
7,909 bbls, S, F & W RR
3,544 bbls, C RR
284 bbls, Augusta
TALLOW—8 bbls, S, F & W RR
TURPENTINE—19 bbls, C & S RR
1,056 bbls, S, F & W RR
193 bbls, C RR
6 bbls, Brunswick
29 bbls, Augusta
CRUDE—64 bbls, S, F & W RR
WAX—1 bx, Brunswick
1 pg, S, F & W RR
282 lb, C RR

CHARLESTON DOMESTIC RECEIPTS

For week ending Dec. 21.

CLAY—38 cks, S C RR
OIL—4 cars, N E RR
ROSIN—918 bbls, S C RR
315 bbls, C & S RR
484 bbls, N E RR
TURPENTINE SPTS—197 cks, S C RR
14 cks, C & S RR
212 cks, N E RR

WILMINGTON DOMESTIC RECEIPTS

For week ending Dec. 21.

ROSIN—5,258 bbls, Inland
TAR—2,670 bbls, Inland
TURPENTINE SPIRITS—1,248 cks, Inland
CRUDE—500 bbls, Inland

BOSTON DOMESTIC RECEIPTS

For week ending Dec. 21.

COTTONSEED MEAL—1,750 bu, F RR
800 bu, G J RR
GREASE—42 bbls, B & A RR
2 bbls, 9 pgs, O C RR
37 bbls, N Y & N E RR
73 bbls, 5 hhds, B & M RR
64 bbls, F RR
1 pg, by sea
TALLOW—21 bbls, 67 tcs, F RR
18 bbls, 31 pgs, B & M RR
38 bbls, O C RR
5 hhds, 2 tcs, by sea
2 bbls, B & A RR
1 bbl, B & P RR

NEW ORLEANS DOMESTIC RECEIPTS.

For week ending Dec 20.

ACID—1 car, N O & N E RR
100 cbys, Cincinnati
ALCOHOL—132 bbls, 20 hf bbls, Ill C RR
CANDLES—275 bxs, Ill C RR
COTTONSEED—3,642 sks, Onachita River
29 cars, 250 sks, S P RR
12 cars, 4,903 sks, T & P RR
1,565 sks, Vicksburg
3,049 sks, Eutaw
11 cars, L, N O & T RR
650 sks, Bayou Sara
1,929 sks, Montgomery
123 sks, Point Vincent

2,681 sks, Washington
26,616 sks, Natchez
697 sks, Wilson's Point
HULLS—2 cars, L, N O & T RR
MEAL—500 sks, Vicksburg
2 cars, 17,235 sks, L, N O & T RR
2,700 sks, T & P RR
1 car, N O & N E RR
FERTILIZER—1 car, N O & N E RR
GLASS—1 car, L & N RR
GLUCOSE—250 bbls, L, N O & T RR
150 bbls, Ill C RR
NAPHTHA—2 tanks, 3 cars, L N O & T RR
OIL—5 cars, 742 bbls, L N O & T RR
6 cars, N O & N E RR
2 cars, L & N RR
480 bbls, 1 car, S P RR
40 bbls, St Louis
CAKE—3 cars, S P RR
6 cars, 2,846 sks, L N O & T, RR
1 car, N O & N E RR
13 sks, St Louis
PUTTY—5 bbls, St Louis
ROSIN—16 cars, N O & N E RR
26 bbls, Springfield
SOAP—1 car, N O & N E RR
150 bxs, St Louis
500 bxs, Ill C RR
STOCK—120 bbls, T & P RR
SODA ASH—11 bbls, St Louis
STARCH—1,560 bxs, Cincinnati
TAR—1 car, L & N RR
TURPENTINE—10 bbls, Springfield
1 car, N O & N E RR

EXPORTS FROM NEW YORK FOR THE WEEK ENDING DEC. 24.

ACID
12 cbys $43 Orinoco, Hamilton
105 cbys $376 Mendoza, Havana
6 cbys $8 C of Washington, Mexican ports
1 cs $25 Cirngorm, Pto Cabello

ACID CARBOLIC
1 cs $12 Caingorm, Pto Cabello

ACID OXALIC
1 cs $4 Caingorm, La Guayra

ACID SULPHURIC
5 cbys $11 Wm H Jones, Pt au Prince
11 cbys $49 Orinoco, Hamilton

ANISEED
10 bgs $218 Colon, San Jose
2 bgs $24 Cairngorm, Maracaibo

BARK EXTRACT
7,200 lb $290 Rhaetia, Hamburg

BONE GREASE
22,000lb $1,000 Trave, Bremen

BORAX
5 cs $72 Colon, Amapala

CANDLES
20 bxs $24 Grace T Littleton, Pto Bello
2 crs $20 Wm H Jones, Pt au Prince
10 bxs $15 Cora J McKay, St Thomas
26 pgs, $382 Colon, Amapala
10 cs $21 Camerata, Pto Rico
1 cs $25 Cairngorm, Maracaibo

CASCARA SAGRADA
2 bls $152 State of Indiana, Glasgow

CEMENT
12 bbls $35 Grace T Littleton, Pto Bello
11 bbls $33 Mendoza, Havana
60 bbls $164 F G French, Baracoa

DYESTUFF
8,400lb $567 S of Indiana, Glasgow

DYEWOOD EXTRACT
500lb $30 La Bourgogne, Havre
7,500lb $573 Waesland, Antwerp
6,700lb $568 Pennland, Antwerp
12,000lb $996, Trave. Bremen

FERTILIZER
2,000 lb $29 Orinoco, Hamilton

FUSTIC EXTRACT
13,455 lb $1,278 Rhaetia, Hamburg

GLUCOSE
5,863 lb $300 Holland, London
45,375lb $1,112 Circassia, Glasgow
60,500lb, 1,603 J City, Bristol

GLUE
382 lb $43 Anita Berwind, Buenos Ayres
3,000lb $300 Trave, Bremen
241 lb $25 Cairngorm, Maracaibo

GRAPE SUGAR
44,860 lb $1,148 Italy, Liverpool
10,200 lb $300 Santiago, Hull
39,600lb $798 Circassia, Glasgow

GREASE
45,184 lb $2,300 Italy, Liverpool
20,738lb $1,400 Circassia, Glasgow
2,013lb $56 Nevada, L'pool

KAVA KAVA
6 bgs $56 Australia, Hamburg

LIME ACETATE
455 bgs $615 P Monarch, London

LOGWOOD EXT
7,176 lb $457 Rhaetia, Hamburg
2,400 lb $240 P Caland, Amsterdam

LUBRICATING GREASE
91 cs and 3,082 lb $385 Gen Domville, Melbourne
35 cs $105 Richard Parsons, Sydney
7,000 lb $195 Furnessia, Glasgow
300 lb $16 La Bourgogne, Havre

MATCHES
14 cs $70 Wm H Jones, Pt au Prince
20 cs $330 Cairgorm, Maracaibo
4 cs $52 Curacao, Williamstadt
4 cs $52 Cora J McKay, St Thomas
6 cs $51 Colon, Panama

OCHRE
7 kgs $20 Caingorm, Pto Cabello

OIL
1,000 gls $1,089 C of Washington, Mexican ports

OIL CAKE
390,000lb $5,490 P Monarch, London
400,000lb $6,000 Holland, London
337,487lb $4,048 Santiago, Hull
1,004,932lb $14,349 Critic, Leith
400,000 lb $6,000 Waesland, Antwerp
442,922 lb $8,858 P Caland, Amsterdam
1,939,887 lb $20,008 Jersey City, Bristol

OIL CASTOR
3 cs $56 C of Washington, Mexican ports

OIL COD
1,000 gls $384 General Domville, Melbourne

OIL CODLIVER
1 cs $14 Caingorm, Pto Cabello
22 pgs $612 Colon, Amapala
48 cs $540 Colon, Colon
15 pgs $675 Finance, Brazil
24 cs $792 Saratoga, Vera Cruz
40 cs $840 Saratoga, Havana

OIL COTTONSEED
1,244 gls $900 Nevada, Liverpool
20 gls $16 Caingorm, Pto Cabello
14,901 gls $8,400 Marsala, Hamburg
453 gls $212 Cora J McKay, St Thomas

OIL ESSENTIAL
12 cs $985 Rhaetia, Hamburg

OIL FISH
20 gls $30 C of Washington, Mexican ports

OIL LARD
480 gls $395 General Domville, Melbourne
2,537 gls $1,740 Ems, Bremen
1,279 gls $900 Circassia, Glasgow
1,270 gls $864 Australia, Hamburg
2,364 gls $1,713 C of Washington, Mexican ports

OIL LINSEED
98 gls $68 Grace T Littleton, Pto Bello
100 gls $73 Colon, Panama
30 gls $22 Colon, Buenaventura
45 gls $28 F G French, Baracoa

OIL LUBRICATING
7,056 gls $1,426 General Domville, Melbourne
249 gls $60 Richard Parsons, Sydney
49,850 gls $9,950 Italy, L'pool
49,850 gls $8,000 P Monarch, London
69,747 gls $11,450 Santiago, Hull
100 pgs & 1,528 gls $799 Finance, Brazil
200 gls $40 Colon, San Jose
64 gls $90 Claribel, Baranquilla
50 gls $23 Geo O Hovey, Cayenne
51 gls $38 F G French, Baracoa
9,557 gls $767 Lake Ontario, Liverpool
11,000 gls $3,300 Waesland, Antwerp
6,282 gls $1,130 Circassia, Glasgow
12,360 gls $904 Australia, Hamburg
760 gls $175 Colorado, Hull
20,900 gls $6,373 Nevada, Liverpool
447 gls $46 C of Washington, Mexican ports
1,264 gls $632 State of Indiana, Glasgow
100 gls $80 Cairngorm, Maracaibo

OIL MEAL
37,500 lb $600 Britannia, Bridgetown

OIL OLEO
174,763lb, $15,024 P Caland, Amsterdam

PARAFFINE WAX
133,650lb $10,000 P Monarch, London
300 bbls $3,275lb, Circassia, Glasgow

PEPPER
9 bg $177 Camerata, Pto Rico
5 cs $101 C of Washington, Mexican Pts

PETROLEUM JELLY
1 cs $16 Cora J McKay, St Thomas

PINK ROOT
1 cs $20 Australia, Hamburg

PUMICE
6 pgs $65 Richard Parsons, Sydney

QUERCITRON EXTRACT
7,000lb $350 De Ruyter, Antwerp

QUICKSILVER
20 fl $900 Colon, Amapala

QUININE
500 ozs $236 Caingorm, Maracaibo

ROSIN
900 bbls $1,843 Telos, Pto Plata
148 bbls $323 General Domville, Melbourne
364 bbls, $425 Circassia, Glasgow
70 bbls $120 Camerata, Porto Rico
11 bbls, $35 S S Bickmore, Pt au Pitre
10 bls $25 Frank & Willie, St John N B
16 bbls $6 C of Washington, Mexican Pts
205 bbls $265 Lantana, Bahia
40 bbls $138 Cairngorm, La Guayra

SEMOLA
100 bgs $400 Cairngorm, Marseilles

SENEGA
20 bls $— Marsala, Hamburg

SOAP
59 bbls $600 Italy, Liverpool
5 pgs $25 Orinoco, Hamilton
300 bxs $437 Grace F Littleton, Porto Bello
9 cs $180 Telos, Pto Plata
2,850 bxs $1,753 Wm H Jones, Pt au Prince
200 cs $100 Curacao, Williamstadt
1,000 bxs $1,625 Colon, Panama
20 bxs $31 Colon, Colon
1 cs $16 Colon, Hong Kong
25 pgs $425 Colon, Payta
1 cs $10 Colon, Aspinwall
1 cs $21 Colon, Puerto Arenas
110 bxs $224 Aguan, Greytown
25 bxs $81 Camerata, Porto Rico

SOAP STOCK
742lb $18 C of Washington, Mexican Pts

SODA ASH
4 cks $120 C of Washington, Havana

SODA CAUSTIC
75 dms, $1,350 Telos, Pto Plata

SODA SILICATE
10 cks $100 Telos, Pto Plata

SPERMACETI
8,050 lb $1,632 Italy, Liverpool

STARCH
160 bxs $— Holland, London
180 bxs $231 Cora J McKay, St Thomas

TALLOW
217,712 lb $14,241 Telos, Pto Plata
56,168 lb $3,223 Italy, Liverpool
2,311 lb $174 Colon, Colon
777,768 lb $31,111 P Caland, Amsterdam
85,947 lb, $5,550 Nevada, Liverpool
11,999 lb, $936 C of Washington, Mexican Pts

TAR
10 bbls $30 Grace T Littleton, Pto Bello
8 bbl $10 Wm H Jones, Pt au Prince
50 cs $88 Crown Prince, Progresso

TURPENTINE
12,240 gls $5,995 Gen Domville, Melbourne
2,000 gls $1,020 Amita Berwind, Buenos Ayres
1,400 gls $700 Catania, Rio Janeiro
3,000 lb $1,520 Alice C Dickerman, Buenos Ayres
100 gls $53 Caingorm, Maracaibo
150 gls $60 Wm H Jones, Pt au Prince
30 gls $15 Curacao, Williamstadt
120 gls $72 Colon, Panama
100 gls $52 Finance, Brazil
30 gls $19 Colon, Buenaventura
2,448 gls $1,056 Richard Parsons, Sydney
54 gls $25 Pevélgonne, Hamburg
241 gls $113 Frank & Willie, St John, N B
51 gls $25 C of Washington, Mexican Pts

VARNISH
50 gls $55 Gen Domville, Melbourne
575 gls $394 Amita Berwind, Buenos Ayres
52 gls $52 Caingorm, La Guayra
40 gls $120 Ems, Bremen
140 gls $135 Crown Prince, Progresso
433 gls $576 DeRuyter, Antwerp
80 gls $72 Colon, Panama
120 gls $164 Finance, Brazil
30 gls $20 Colon, Buenaventura
30 gls $37 Colon, Callao
80 gls — Circassia, Glasgow
811 gls $591 P Caland, Amsterdam
180 gls $150 Australia, Hamburg
46 gls $47 Frank & Willie, St John, N B
10 gls $13 C of Washington, Mexican Pts
8,060 gls $1,842 Trave, Bremen

ZINC OXIDE
150 bbls $1,246 Holland, London

New York to San Francisco.

Am str Colon, cleared Dec. 20, via Aspinwall.
Glue—7 bbls, $112
Oil Lard—1,000 gls, $850
Rosin—200 bbls, $600
Soap—451 cs, $1,982

Baltimore Exports.

For week ending Dec. 20.

BARK EXT
20 bxs, Minnesota, London

BONES
910 sks, Minnesota, London

OIL LARD
50 bbls, Minnesota, London

OIL LUB
5,442 gls, Minnesota, London

OIL CAKE
1,320 sks, Minnesota, London

ROSIN
1,000 bbls, Minnesota, London

San Francisco Exports.

For week ending Dec. 12.

CANDLES
17 bxs, Australia, Honolulu

GASOLINE
1,650 gls, W S Bowne, Honolulu

GINSENG
14,551 lb, Rio Janeiro, China

OIL COCOA
261 gls, Umatilla, Victoria

OIL LUB
100 gls, Australia, Honolulu

OIL WHALE
1,268 gls, Rio de Janeiro, China

PAINT
23 cs, Australia, Honolulu
8 pgs, Umatilla, Victoria

PITCH
7 bbls, Rio de Janeiro, Japan

SOAP
99 bxs, Australia, Honolulu
74 bxs, W S Bowne, Honolulu
200 bxs, Rio de Janeiro, Sapan

SPICES
39 pgs, Australia, Honolulu

STARCH
592 bxs, Australia, Honolulu

WHITE LEAD
3500 lb, W H Bowne, Honolulu,

Boston Exports.

For week ending Dec. 21.

ACID
15 cbys, M Sprague, Trinidad

BARK EXTRACT
25 bbls, Hibernian, Glasgow

CANDLES
50 bxs, Hebe, St John's

COTTONSEED MEAL
20 bgs, M Sprague, Trinidad

DYEWOOD
9 pgs, Halifax, Sydney

GLASS WINDOW
1 bx, Yarmouth, Yarmouth

GREASE
588 tcs, Samaria, Liverpool
500 bbls, Roman, Liverpool

LOGWOOD
6 bbls, Hebe, St John's

OIL
26 bbls, Champion, St Pierre

OIL LUB
14 bbls, Halifax, Sydney

OIL SALAD
20 bbls, Roman, Liverpool

OIL CAKE
700 sks, Hibernian, Glasgow
720 sks, Istrian, Liverpool

OIL MEAL
51 bgs, 10 pun, M Sprague, Trinidad

PHOSPHATE
125 bbls, Alice, Bridgewater

SOAP
10 bxs, Hebe, St John's

TALLOW
30 tcs, 20 hhds, Hibernian, Glasgow
31 hhds, Roman, Liverpool

WAX
75 bbls, Hibernian, Glasgow

New Orleans Exports.

For week ending Dec. 20.

CANDLES
11 bxs, City of Dallas, Livingston

COTTONSEED MEAL
8,966 sks, Stag, Bremen
401 sks, Ardangorm, Havre

LEAD
2,200 pigs, Discoverer, Liverpoo

OIL CAKE
4,500 sks, Gracia, Liverpool
490 sks, Stag, Bremen
14,596 sks, Intrepid, London

Charleston Exports.

For week ending Dec. 21.

COTTONSEED
23½ tons, Tikonia, Liverpool
5,352 bgs, Straits of Gibraltar, Liverpool

PHOSPHATE ROCK
200 tons, Tikonia, Liverpool

ROSIN
750 bbls, Straits of Gibraltar, Liverpool

Savannah Exports.

For week ending Dec. 21.

ROSIN
1,249 bbls, Yzabel, Orporto

Philadelphia Exports.

For week ending Dec. 21.

BARK EXTRACT
25 bbls, Lord Gough, L'pool

OIL LUBRICATING
1,800 bbls, Lord Gough, L'pool

OIL CAKE
797 sks, Manitoban, Glasgow
1,900 bgs, Lord Gough, L'pool
959 sks, Maryland, London

SOAP
113 bxs, Lord Gough, L'pool

TALLOW
50 cks, 400 bbls, Manitoban, Glasgow

WAX
125 bbls, Lord Gough, L'pool

TOTAL PACKAGES AND VALUES OF NEW YORK IMPORTS,

As returned by the Custom House for the week ending Dec. 30, 1888:

	Pkgs.	Val.
Glass, plate	273	$18,292
Glass, window	15,621	17,734
Looking glass plate	104	20,806
Arsenic	606	4,537
Acid, benzoic	2	89
Acid, boracic	15	734
Acid, citric	69	3,846
Acid, oxalic	120	5,681
Acid, picric	27	394
Acid salicylic	10	1,488
Acids, all other	77	8,712
Aniline colors	629	45,849
Aniline salt	93	3,160
Ammonia, carbonate of	50	1,819
Ammonia, muriate of	42	1,458
Ammonia, sal	4	148
Argols	848	33,448
Alum	287	1,021
Albumen	60	3,348
Alizarine	142	9,534
Asphalt	....	2,679
Balsam copaiba	7	1,130
Balsam Peru	5	450
Balsam tolu	43	1,294
Bark, Peruvian	20	200
Bark, other	1	12
Barytes, carbonate	25	608
Barytes, sulphate	258	655
Barytes, other	65	662
Bay rum	47	1,621
Bleaching powder	984	16,659
Bronze powder	....	17,272
Butter, cocoa	97	5,068
Chalk	....	272
Chemical salts	196	2,435

Calcoary	326	4,875
Cochineal	15	715
Cobalt	6	2,757
Cubebs	13	581
Cudbear	15	1,140
Dextrine	1,300	8,110
Dyewood extract	29	1,221
Ergot	27	584
Fish sounds	74	2,055
Flowers, arnica	81	530
Flowers, chamomile	7	178
Flowers, lavender	1	30
Flowers, other	82	2,055
Fullers earth	2,160	1,971
Gelatine	72	2,230
Glucose	126	2,337
Glycerine	456	33,840
Gum arabic	15	2,096
Gum copal	240	3,774
Gum kino	5	112
Gum licorice	297	8,432
Gum, myrrh	2	45
Gum, shellac	600	12,929
Gum senegal	31	4,326
Glue	306	10,833
Indigo	54	8,363
Indigo auxiliary	17	729
Indigo, extract of	5	179
Iodine	44	12,316
Juniper berries	200	442
Locust beans	86	278
Manganese	7	213
Madder	11	985
Magnesia	50	245
Manuring salt	....	8,008
Mica	2	543
Morphine	1	410
Nutgalls	125	3,594
Nutgalls, extract of	10	607
Archil liquor	5	336
Oxide of zinc	50	367
Oil, aniline	2	390
Oil, almonds	11	120
Oil, bergamot	121	6,762
Oil, caraway	2	171
Oil, cajeput	25	535
Oil, cinnamon	1	79
Oil, cod	87	1,055
Oil, cocoanut	10	197
Oil, geranium	3	682
Oil, lavender	71	8,963
Oil, lemon	32	763
Oil, neroli	2	1,375
Oil, origanum	19	360
Oil, orange	10	273
Oil, olive	3,924	19,182
Oil, rapeseed	143	3,529
Oil, rose	1	600
Oil, rosemary	1	21
Oil, sesame	65	2,589
Oil, sod	60	475
Oil, sandalwood	2	117
Oil, tanners'	100	702
Oil, thyme	13	1,176
Oil, other essential	28	1,505
Oil, all other	38	931
Paints, unspecified	....	9,104
Paint, Berlin blue	6	211
Paint, colcothar	54	216
Paint, drop black	16	294
Paint, iron oxide	124	710
Paint, ocher	105	452
Paint, orange mineral	48	2,093
Paint, red lead	25	1,310
Paint, sienna	61	588
Paint, Tuscan red	10	58
Paint, umber	130	658
Paint, Van Dyke brown	113	438
Paint, Venetian red	544	2,087
Potash, chlorate	266	4,092
Potash, carbonate	92	3,357
Potash, caustic	8	164
Potash, prussiate	15	1,775
Quinine	88	23,243
Regulus antimony	251	14,854
Rose leaves	10	471
Root, arrow	2	32
Root, gentian	46	363
Root, licorice	12,491	75,110
Roots, all other	160	2,032
Salt cake	35	148
Salicine	1	93
Saltpeter	1,338	7,970
Senna	85	2,180
Soda ash	2,288	38,664
Soda, caustic	1,231	12,435
Soda, hypo of	184	502
Soda, nitrate	1	5
Soda, sal	696	1,490
Sponges	1,044	7,282
Sumac	2,256	6,067
Sumac, extract of	85	1,514
Sugar of milk	18	598
Terra alba	300	1,182
Ultramarine	1	42
Vanilla beans	2	536
Varnish	16	1,096
Other drugs	....	25,154
Bristles	67	12,055
Brandy	3,549	46,290
Cordials	1,141	8,826
Gin	663	3,993
Mineral waters	846	2,550
Rum	146	2,441
Whisky	616	3,585
Wines	13,664	133,648
Antimony	1	57
Dutch metal	30	7,105
Ginger	9	234
Mustard	443	6,191
Nutmegs	21	942
Pepper	428	8,846
Pimento	497	3,714
Cork wood	....	14,398
Empty barrels	....	1,371
Logwood, M lbs	410	4,100
Pimentowood	....	242
Sandalwood	....	100
Brushes	....	10,978
Candles	....	1,200
Carbon	....	1,087
Cocoa, bgs	2,628	37,923
Cocoa, preparations of	331	6,960
Hops	294	29,904
Matches	150	867
Plaster	....	3,075
Portland cement	1,788	1,892
Perfumery	422	35,667
Polishing powder	....	369
Sago	145	1,215
Seed, annatto	97	654
Seed, anise	25	273
Seed, canary	273	1,419
Seed, castor	272	486
Seed, cardamom	3	256
Seed, cummin	25	374
Seed, fennel	29	324
Seed, hemp	1,079	3,894
Seed, mustard	225	1,998
Seed, rape	19	68
Linseed	4,489	19,775
Soap	6	366
Soap, castile	394	1,299
Soap, stock	134	1,172
Wax	....	599

GOODS ON THE WAY TO THE UNITED STATES BY SAIL.

Calcutta

TO NEW YORK.

Exporter, 4,152 bgs cutch, 3,000 bgs linseed, 300 cs castor oil

El Capitan, 1,028 bgs saltpeter, 950 bgs cutch, 2,500 bgs linseed, 100 cs buttonlac

Ingomar, 16,587 bags linseed

Stephen D Horton, 1,088 bgs saltpeter, 400 bgs cutch

Pythomene, 2,179 bgs saltpeter, 15,575 bgs linseed, 100 cs shellac, 1,000 bgs ginger

I L Skolfield, 950 bgs cutch

George R Skolfield, 680 bgs cutch, 150 cs buttonlac

Cirgenti

TO BALTIMORE

Mary Jenness, 645 tons seconds brimstone

TO CHARLESTON

Teresa, 650 tons seconds brimstone

Hiogo

TO NEW YORK

Thos Perry, 1,415 pls camphor

Guy C Goss, 62 cs Japan wax, 6,250 lbs sulphuric acid, 5,678 pls sulphur

Hong Kong

TO NEW YORK

Wandering Jew, 25 cs essential oil

Sachem, 400 cs cassia, 50 cs essential oil

Nyl Ghau, 780 cs cassia, 450 cs Saigon cassia

C C Chapman, 120 cs essential oil, 100 cs galls 20 cs nut oil

Mary L Stone, 350 cs cassia

Licata

TO BALTIMORE

Chioggia, 710 tons seconds brimstone

TO CHARLESTON

Stella di Sorrento, 680 tons seconds brimstone

Peppino, 600 tons seconds brimstone

Emanuele, 510 tons seconds brimstone

TO PROVIDENCE

Angela Maria, 570 tons seconds brimstone

TO SAVANNAH

Aurora, 680 tons seconds brimstone

TO WILMINGTON

Francesco C, 520 tons seconds brimstone

Singapore

TO NEW YORK

J W Gildemeister, 10,095 pls gambier, 2,019 pls gum copal, 252 pls cube gambier, 1,706 pls sago flour, 102 pls gum copal dust, 137 pls gum damar

Sonntag, 10,081 pls gambier, 1,104 pls sago flour, 2,292 pls gum copal, 85 pls gum damar, 87 pls cube gambier

TO BOSTON

J M Clerk, 5,040 pls gambier, 840 pls sago flour 253 pls black pepper, 261 pls gum copal, 505 pls pearl tapioca, 252 pls flake tapioca, 253 pls flour tapioca

Evie Reed, 3,361 pls gambier, 842 pls sago flour, 51 pls pearl sago, 505 pls pearl tapioca, 84 pls cube gambier, 168 pls flake tapioca, 361 pls gum copal

West Coast South America

TO NEW YORK

John Gill, 12,000 bgs nitrate soda

Jas A Wright, 10,000 bgs nitrate soda

Wm H Crapo, 17,000 bgs nitrate soda

Isaac Jackson, 7,000 bgs nitrate soda

Glengarry, 5,000 bgs nitrate soda

Amanda, 12,000 bgs nitrate soda

Willard Mudgett, 10,000 bgs nitrate soda

St Marks, 20,000 bgs nitrate soda

TO BALTIMORE

Madura, 10,000 bgs nitrate soda

TO BOSTON

Manuel Llaguno, 17,000 bgs nitrate soda

TO HAMPTON ROADS

E L Pettingill, 6,800 bgs nitrate soda

Linnet, 10,000 bgs nitrate soda

TO PHILADELPHIA

Chesebrough, 15,000 bgs nitrate soda

Bessie Webster, 6,000 bgs nitrate soda

RECORD OF VESSELS.

Port & Name.	Sailed.	Last Reported.
Calcutta.		
Exporter	Aug 18	St Helena, Oct 23
El Capitan	Sept 29	
Ingomar	Sept 29	
S D Horton	Oct 8	
Pythomene	Oct 13	
I L Skolfield	Oct 15	
G R Skolfield	Nov 6	Spoken Nov 19
Girgenti.		
M Jenness	Oct 25	Tarifa, Nov 19
Teresa	Sept 29	Off Dec 17
Hiogo.		
T Perry	July 14	
G G Goss	Sept 17	Distress, San Fran
Hong Kong.		
W Jew	Aug 9	New Anjer, Oct 10
Sachem	Sept 4	New Anjer, Oct 12
Nyl Ghau	Sept 17	New Anjer, Oct 14
C C Chapman	Sept 22	New Anjer, Oct 18
M L Stone	Nov 14	
Licata.		
Chioggia	Oct 1	
S di Sorrento	Oct 10	
Peppino		
Emanuele	Oct 1	
A Maria	Oct 6	
Aurora	Oct 8	
Francesco C	Oct 1	
Singapore.		
J M Clerk	Sept 29	New Anjer, Oct 17
J W Gildem'er	Oct 18	Distress, Algoa Bay
Sonntag	Oct 30	
Evie Reed	Oct 30	
W. C. South America.		
John Gill	Aug 23	
Madura	Sept 4	
Chesebrough	Oct 15	
St Marks	Sept 27	
J A Wright	Sept 30	
W W Crapo	Oct 31	
I Jackson	Oct 19	
Glengarry	Dec 1	
Amanda		Dec sailing?
W Mudgett		Jan sailing
M Llaguno	Oct —?	
E L Pettingill		Nov sailing
Linnet		Jan sailing
B Webster		Dec sailing

Canada Oil Report.

The price of crude was advanced again this week being $1 23½, on going to press making a strong effort to get to one dollar and twenty-five cents before the coming new year. Sales are few, however, partly owing to the approach of the holidays, and to the fact that some of the refiners are holding off from buying at present, thinking that the producers may weaken and let their oil "slide" at lower figures. But in this we are opinion that they are very much mistaken as crude values were never so firm and bullish as they are now. Crude is more likely to see one dollar and fifty cents ere long, than recede any, so there is no reason for supposing that the price is going to go down on account of a few speculators and refiners stepping out of the market for a week or so. The manufacturers have agreed to put the price of oil up and we expect in the near future to see the price of illuminating oil appreciate several cents.

Just how refined could be sold at a profit at the late low figures was a mystery, especially with crude at ruling prices, and a conundrum which only those within the inner circle of the initiated can hope to solve. Refined and crude are just now as incompatable as oil and water, and before this natural equilibrium can be restored one must go up or the other must come down, the interesting question is "which shall be which." Under ordinary circumstances, the attempt to control the price of the raw material by the price of the manufactured article, might be regarded as an attempt to reverse familiar and well settled rules of political economy. But it was evidently believed by the bear element that by lowering the price of refined they could effect such a timidity on the part of the buyers of crude that the latter would inevitably decline; and it must be admitted that past years have not failed to afford them some experience by way of precedent.

The total clearances of the Petrolea Oil Exchange for the week ending Dec. 13 were 35,893 bbls; for the week ending Dec. 20 were 11,472 bbls.—*Petrolea Topic, Dec. 21.*

Disinfecting Powders.

Mr. Rowland Williams read a paper on the examination of commercial carbolic acid and of disinfecting powders made therefrom before the Manchester section of the Society of Chemical Industry. He described certain experiments he had made, which, he said, convinced him that the distillation method was the most accurate of the processes at present in use for the determination of water in commercial carbolic acid. Commercial carbolic acid, he said, sometimes contained rather an objectionable amount of sulphuretted hydrogen, and the attention of the analyst ought always to be directed to this point. If necessary the percentage might be ascertained by some simple modification of the well known lead acetate method. In the case of carbolic acid powders, the basis of which was silica, or some similar substance, incapable of combining with carbolic or cresylic acid, the percentage of tar acids was, he believed, usually determined by the majority of chemists by distillation of a weighed quantity of the sample in a dry retort without any special condensing arrangement. This process gave fairly accurate results—generally rather too low, however, owing to loss either by decomposition or by imperfect condensation of the acid, or by both. Moreover, the distillation method, besides being of a somewhat crude character, was decidedly inconvenient for use in laboratories where a considerable number of samples of carbolic powder had to be simultaneously examined. On this account, for the last year or two he had endeavored to devise some simple process which would yield accurate results and be applicable to a large number of samples to the same time. His first experiments were directed to the extraction of the tar acids from disinfectant powders by means of suitable volatile liquids, such as ether and alcohol, with subsequent evaporation of the solvents at the lowest possible temperature, but although the greatest care was taken, more or less of the acid was invariably dissipated, even at the gentle heat employed during the process. He next turned his attention to some body capable of combining with the tar acids, the solution of which could then presumably be evaporated without any risk or loss. It naturally occurred to him that as soda and potash combined in the desired manner, with formation of the corresponding carbolates and creasylates, caustic soda would be the simplest agent to employ; and, on working the experiment, he found it to answer the purpose admirably. Just about the time when he had succesfully worked out this process Muter and De Koningh published the details of a very similar method; but as their method semed to him unnecessarily elaborate in more than one point, perhaps he might describe in full his simpler mode of procedure. He placed a fairly large quantity of the sample—say 600 grains—in a stoppered bottle, added 3,000 grains of strong alcohol (methylated spirit allowed to stand over carbonate of potash and redistilled was very suitable for the purpose), and digested for an hour or two, with frequent shaking. Then he passed the liquid through a double filter; and transferred two-thirds of the whole to a 10-oz. porcelain basin. He now added 300 grains of a 10-per cent. solution of caustic soda, and evaporated the alkaline liquid until all the alcohol had been driven off, and the fluid measures only a few hundred grains. Then he transferred to a long narrow tube capable of holding 1,000 grains, and very carefully graduated into 500 divisions. If the alkaline solution was at all turbid it must be filtered and again concentrated previous to being transferred to the graduated tube. One hundred grains of hydrochloric acid were next added, and the liquid then saturated with common salt. After mixing well and allowing to cool to 10° Fahrenheit, the volume of tar acids might be read off with considerable accuracy. As the specific gravity of these acids usually lies between 1·04 and 1·05, he ascertained their approximate weight by adding on one-twentieth of the volume. For example, if 400 grains of a 15 per cent carbolic powder had yielded 56 grains measure of tar acids, the exact percentage would be 56 + 28 divided by 4 = 14·7 per cent. He always examined the separated tar acids still further by shaking with twice their volume of a 10 per cent soda solution, and noting whether they dissolve to a perfectly clear solution. In cases where the tar acids existed in combination, with lime for instance, the process required a slight modification, which an experienced analyst could easily carry out. He might mention that he had proved the essential accuracy of the above process by experiments on two samples of carbolic powder, respectively containing 15 and 20 per cent of tar acids, which had been most carefully prepared in his laboratory. The results were as follows:

	Added, per cent.	Found, per ct.
Sample No. 1	15	14·8
Sample No. 2	20	20·0

These figures, he said, showed that the process might be relied upon, while for simplicity and comparative rapidity it left nothing to be desired.

Distilled Stearine.

In his investigation on turkey red oil, Benedikt repeatedly tested distilled stearine for hydroxy acids and always found them absent. Recently Geitel has expressed it as his opinion that the larger quantity of solid fatty acids obtained in the sulphuric acid saponification than is obtained in the lime saponification is due to the formation of oxystearic acid. The following are the results of experiments on the subject which Benedikt and Grussner have carried out. The sample employed was one prepared by the sulphuric acid saponification method, and had been distilled after saponification and pressed twice; melting point, 52·1°. In testing for the oxyacids the acetyl value was determined. The saponification value of the non-acetylized fatty acid was 206·4°, of the acetylized fatty acid 207·5°; the acetyl value was therefore 1·1, which would indicate the presence of 0·5 per cent of oxystearic acid. But as the value obtained is still within the experimental error of the method, the presence of hydroxy fatty acids does not seem proved. The sample contained no oleic acid as on preparation of the lead salt none was taken up by ether. In spite of the absence of oleic acid the sample absorbed 13·94 per cent of iodine from a v. Hubl's iodine solution. Another unsaturated acid is therefore present.

Now M. C. and S. Saytzeff have found that on distillation oxystearic acid is converted into iso-oleic acid which melts at 43° to 45°. It is possible therefore that in the commercial distillation with superheated steam, oxystear-

ic acid is converted into iso-oleic acid, and that commercial stearine obtained by the sulphuric and saponification method is a mixture of stearic, palmitic and iso-oleic acids. The reactions are probably as follows:

On saponification with sulphuric acid we get—

$$C_{18}H_{34}O_2 \text{ (oleic acid)} + H_2SO_4 = C_{18}H_{35}(OSO_3H)O_2.$$

On boiling the product of this reaction with water we get—

$$C_{18}H_{35}(OSO_3H)O_2 + H_2O = C_{18}H_{35}(OH)O_2 + H_2SO_4.$$

And finally on distillation we obtain iso-oleic acid thus—

$$C_{18}H_{35}(OH)O_2 \text{ (oxystearic acid)} = C_{18}H_{34}O_2 \text{ (iso-oleic acid)} + H_2O$$

Calculating the percentage of iso-oleic acid from the iodine value obtained above, we should find 15·5 per cent in the stearine from Gonda. Benedikt and Grussner are trying to prepare iso-oleic acid from distillation stearine in quantity.

Trade Marks in India.

The Indian Government has introduced a bill, to come into force on April 1 next, and of which the following are the chief provision as furnished by a correspondent of the *Oil and Colorman's Journal*:—

The bill defines "trade marks" and "trade descriptions" in accordance with the universally accepted meaning and states a "false trade description" to be one that is "untrue in a material respect as regards the goods to which it is applied," whether it has been false when applied, or rendered so by subsequent alteration.

The bill differentiates between "trade marks" and "property marks" as follows: "A mark denoting that goods have been made or manufactured by a particular person, or at a particular time or place, or that they are of a particular quality is called a trade mark," and includes marks that are resistered out of India.

"A mark used for denoting that movable property belongs to a particular person, is called a property mark."

Whosoever marks any "goods, or any case, package, or other receptacle containing goods," or uses "receptacles so marked as to mislead as to time or place of manufacture, or as to the quality of the goods, &c.," is said to use a false trade mark, and shall, unless he proves that "he acted without intent to defraud, be punished with imprisonment of ether description for a term which may extent to one year, or with fine, or with both.

Whosoever counterfeits such marks, or knowingly uses as genuine a counterfeit mark, or has in his possession any "die, plate, or other instrument for the purpose of "counterfeiting any such marks, is made punishable with imprisonment up to three years, or with fine, or both.

Whosoever sells or exposes for sale goods that are falsely marked, shall, unless he proves his good faith and discloses the source whence he obtained the goods, be liable to imprisonment for one year, or to a fine, or both.

The application of a "name or initials—(*a*) not being a trade mark or part of a trade mark; and (*b*) being identcial with, or a colorable imitation of the name or initials of a person carrying on business in connection with goods of the same description and not having authorized the use of such name or initials, is deemed a false trade description.

The definition of "application" of a mark or trade description to goods is most exhaustive, and seemingly sufficient to cover the entire ground.

Saving clauses are inserted for the protection of those who act inadvertently or in ignorance. Provision is made for the forfeiture of goods falsely marked, and for the intervention of the Customs officers. This bill makes no difference in the manner of registering trade marks in India, but is meant to correspond with the British Merchandise Marks Act.

Carnegie's Oil Bonanza.

It is an interesting fact not generally known that Mr. Andrew Carnegie, the big iron manufacturer, whose income was the subject of so much newspaper comment during the campaign, made his first big money in the oil business. The death, in Pittsburg, of David A. Stewart, chairman of Carnegie Bros. & Co., suggests a reference to the Columbia Oil Company, of which Mr. Stewart was Treasurer and the active manager, and Mr. Carnegie one of several stockholders This company bought and operated the Story farm, on Oil Creek, between Titusville and Oil City, a history of which reads like a story of the Arabian Nights. It was the richest farm ever developed in the oil country, and from his interest in this farm Mr. Carnegie became comparatively a rich man. The farm was originally owned by William Story, who barely made a living from it prior to the discovery of petroleum. It consisted of 400 acres, and Mr. Story offered the place for $4,500; one-third of which was to be cash and the balance in three annual payments. He could find no purchaser until oil was struck on the creek, and then he sold it to Mr. Carnegie and his friends for $35,000 cash. The Columbia Oil Co. was organized to develop it, May 1, 1861, Mr. Stewart was made treasurer and Mr. Carnegie one of its directors. The capital stock was $250,000, divided into 10,000 shares of $25 each. The farm proved to be productive beyond all expectation, and in the entire history of the petroleum industry no other farm approached it as an oil bonanza. Its first year's output was 20,800 barrels, and the following year it was increased to 80,000. In two and a half years after the incorporation of the company dividends had been declared amounting to 150 per cent. on the capital stock. In 1864 the production of the farm increased to 141,508 barrels. During this year the average price of oil was $9 87½ per barrel. During the first six months of this year four dividends were declared amounting to 160 per cent on the capital stock. A month later the capital was increased to $2,500,000 and a dividend of 5 per cent on this amount was at once declared from the earnings of the farm. Before the close of the year five dividends were declared, making in all 25 per cent on the increased stock. Ten years after the first well was struck on the property by the production of the farm was 142,034 barrels for that year. In these ten years 1,715,972 barrels were produced, and the whole amount of its dividends was 401 per cent. on its capital stock. In a lawsuit in Erie, in 1885, Mr. Stewart, Treasurer of the company, testified that the Columbia Oil Company had sold oil from the farm to the value of between $6,000,000 and $7,000,000. Estimating the amount of oil produced by the farm since that time, the total output is placed by practical oil men between $9,000,000 and $10,000,000. Although the Story farm has been constantly operated for twenty-seven years, it is still producing about one hundred barrels a month. All the old, original wells have been drained and abandoned some years ago, and the present production is from new wells drilled within the past few years. Hundreds of farms in the oil region have yielded vast fortunes to their owners, but none of them has a record equal to this, and from this farm Mr. Carnegie received a start that has made him one of the money princes the world.

Starch.

(Continued from last issue, page 36.)

Starch is slowly dissolved in sulphuric acid, by which sulphureous acid is disengaged and a large quantity of charcoal formed. It may also be converted into grape sugar by dilute sulphuric acid, by the action of which it is first changed into dextrine and then into the grape sugar. The starch in grain is, in the process of malting, thus converted also. Muriatic acid also dissolves starch into a solution which resembles the mucilage of gum arabic. When left at rest, a thick, oily mucilaginous liquid appears above, and a transparent straw-colored liquid below. The odor of the muriatic acid remains, but on the addition of water it is destroyed and a strong peculiar smell is emitted. Starch is also soluble in nitric acid with the evolution of nitrous gas. The solution assumes a green color, and when heat is applied the starch is converted into oxalic and malic acids. Some part of it, however, remains insoluble, and when this is separated by filtration and washed with water it has a thick oily appearance like tallow; it is soluble in alcohol, and when distilled yields acetic acid and an oily matter similar to tallow in odor and consistence.

Starch occurs in plants in the cavities of their cellular substance, not attached to the cells but surrounded by an aqueous liquid. Under the microscope its organic structure is easily perceived. It presents the form of more or less roundish or oval grains or cells, the size and shape of which differ in the starch of different plants, in that of the same plant at different times, and from different parts of the same plant at the same time. Thus the diameter of the cells of potato starch are found to very from the 2-100 to the 7-1000 of an inch. Those of wheat are more regular in shape than those of the latter. The size of the granules increase with the size of the plant, anp in certain of them the shape also changes. Each granule of starch has an outer envelop differing in its characters from the globule which it encloses, or rather, the granules consist of concentric layers of unequal thickness. The interior and exterior of them are alike insoluble in cold water, or, are at least so little soluble that 1,000 parts of water are required to dissolve one of starch. On bruising these granules with sand in a mortar, the envelope is broken and the interior exposed. On putting the mixed powder into cold water it swells up into a tremulous jelly, but does not dissolve more than in the above limited proportion; or, if the granules be not bruised but be simply mixed with water at the temperature of 140° Fahr., they imbibe water, swell, burst their envelopes, and form a jelly, which, however, is not regarded as a solution of starch any more than the water sucked up by a sponge is regarded as a solution of that substance. If this jelly be placed on filtering paper it parts with its moisture and dries up into a horn-like substance insoluble in cold water. This substance is termed amidin. It is soluble in boiling water, and a strong solution of it, on cooling, will deposit much of the starch in a gelatinous state.

The granules of some varieties of starch appear under a microscope with a high magnifying power, marked on their surface with concentric rings surrounding a well-defined point. Raspail regards these as wrinkles, affording indications of a spiral attachment to the interior of the integument proceeding from the point or hilum. Of the various starches the granules of those of "Tous les mois" are much the largest, while those of sago are the smallest.

Under the polariscope many beautiful effects are produced by all the varieties of starch, but especially by those of "Tous les mois," potatoes, and maize.

A remarkable increase in the solubility of starch may be obtained by dissolving it in hot water and adding alcohol to the solution.

Starch is similar in some of its properties to gum; it becomes brittle when dry, and in drying, a mass of it breaks up into those small concrete columnar pieces so familiar to the purchasers of it in packets. Starch gum is known in commerce as British gum.

Starches of various sorts are largely used as food, but while affording barely any flesh and no bone nutriment whatever, they are of the highest value in diet, as sources of animal heat. The lungs of warm-blooded animals correspond in their office to a furnace, for by them the charcoal elements of food are oxidized or burnt by slow combustion. The starch of food, being converted into chyle, is conveyed in a soluble state to the thoracic duct and thence to the lungs in a venous blood of a dark color and loaded with charcoal. Coming there in contact with the oxygen of the air, it undergoes combustion, just as coals do in an ordinary fire, and like them, imparts heat to all parts of the system. Practically, therefore, starch may be considered as the coals or fuel of the human system. Hence with oils, fats, sugars, etc., it is a heat-giver—a quality, of course, of the highest importance to animal life.

The starches of commerce are very numerous, and are highly interesting and important, not only as furnishing varieties of starching materials and adhesive gums, but also as food supplies, and a description of their several varieties and uses will be given in the continuation of this article.

Adulteration of Food and Drugs.

REPORT OF COMMISSIONER OF INTERNAL REVENUE.

Under the provisions of sections 11 and 12 of an act to prevent the manufacture or sale of adulterated food or drugs in the District of Columbia, approved October 12, 1888, any health officer, inspector of nuisances, or food inspector of the District may submit samples of food or drugs to this office for analysis, and purchasers of food or drugs are also entitled to so submit the articles purchased. The Commissioner of Internal Revenue is required to cause such analysis to be made under such rules and regulations as may be prescribed by the Secretary of the Treasury. This office is also authorized by section 16 of said act to declare from time to time certain articles or preparations to be exempt from the provisions of the act.

In view of the additional duties imposed upon me as above stated, I have procured a report from the microscopist of this office on the subject of food adulterations, which is herewith submitted:

The adulteration of alimentary substances has been practiced from the most ancient times, and numerous laws and regulations have been adopted in various countries to check and prohibit such sophistications.

France has taken the lead in protecting consumers of food from adulterations, and in 1802 the Conseil de Salubrite was established in Paris. In England, as well as in France, Germany, and other Continental countries, laws against the adulteration of individual articles, such as tea, coffee, beer and wine, have been passed since the Middle Ages. The first general act was not passed in England till 1860, and this was amended in 1872. However, they were found unsatisfactory, and the Sale of Food and Drugs Act was passed in 1875, and further amended in 1879 in the endeavor to obtain a workable law. The latter law is now in force, though the third and fourth sections of the act relating to the mixing, coloring, staining, or powdering of any article of food so as to injure health, or in the case of drugs so as to injure their quality, are practically of no value and unenforced because the fifth section provides that guilty knowledge is essential to the proof of the offense, and no prosecution, unless supported by very exceptional circumstances, would be successful under these sections. Sections six to nine are the ones that are found workable, and provides that no person shall sell foods or drugs, with certain exceptions, to the prejudice of the purchaser; shall not abstract any constituents of food, and that compound foods or drugs must be in accordance with the demands of purchase, though with these sections again a large loop-hole for the escape of offenders is provided in section eight, which states that a legible descriptive notice that the article sold is a mixture exonorates the seller.

In this country in 1877 several of the State boards of health united, viz: Those of New York, New Jersey, Massachusetts and Michigan, and at their instance laws formulated on the English law were passed, and annual reports are now made by these boards on the results of the examinations of their chemists on the adulterations of foods and drugs practiced in their several States.

On June 26, 1848, an act was passed by Congress to secure the purity of imported drugs, and is still in force. Its efficacy is directed principally towards Peruvian bark and opium.

The tea adulteration law was passed by Congress March 2, 1883, and on August 2, 1886, the oleomargarine law was passed, defining butter and butter substitutes.

The following list of the most common adulterants met with in the principal food products is compiled from the reports of the State Boards of Health, the returns of the English Inland Revenue Department, and of the Report of the Municipal Laboratory of Paris:

FOOD PRODUCTS AND THEIR CHIEF ADULTERANTS.

Food products.	Adulterants.
Milk	Water, removal of cream, addition of cottonseed or oleo oil to skim milk.
Butter	Water, salt, foreign fats, artificial coloring matter.
Cheese	Lard, oleo oil, cottonseed oil.
Flour, bread	Other meals, alum.
Baker's chemicals	Starch, alum.
Canned foods	Metallic poisons.
Tea	Exhausted tea leaves, foreign leaves, tannin, indigo, Prussiblue, turmeric, gypsum, soapstone, sand.
Coffee	Chicory, peas, beans, rye, corn, wheat, coloring matter.
Cocoa and chocolate	Sugar, starch, flour.
Beer	Artificial glucose, malt and hop substitutes, sodium bicarbonate, salt, antiseptics.
Sirup	Glucose.
Honey	Glucose sirup, cane sugar.
Confectionery	Glucose, starch, artificial essences, poisonous pigments, terra alba, gypsum.
Olive oil	Cottonseed and other vegetable oils.
Vinegar	Water, sulphuric acid.
Pickles	Salts of copper.
Spices	Flour, starches or various kinds, turmeric.

An inspection of this list shows that the great majority of substances used for adulterants are not injurious to health; the public is cheated, but not poisoned. They consist for the most part in the willful and fraudulent addition of substances which do not exist in the normal product, or are only found there in an appreciably lower proportion. Another large class consists of simple alterations by the willful and fraudulent subtraction of some substance that is normally present in the product, and which is not found in the abnormal product, or only in an appreciably lower proportion.

The number of substances used that are positively injurious to health is small, and they generally make their presence felt by the prompt manner in which dangerous symptoms manifest themselves in the consumer. Such are the arsenic, copper, lead, and other metallic poisonous salts that are sometimes used for artificial colors in candies, pickles, etc.

The use of antiseptics, such as salicylic acid, sulphite of soda, borax, etc., for the prevention of fermentation in improperly prepared foods, is daily becoming more frequent. These deserve mention as being additions to foods of a class of substances used to cloak carelessness in manufacture, and producing, in many cases, deleterious effects on the human economy. The addition of such antiseptics as salicylic acid to food products is prohibited in France and Germany, though in the latter country such use is allowed when the food product is exported to countries where such addition is not prohibited.

It seems to be a popular impression that any substance used as an adulterant of, or a substitute for, a food product is to be avoided as itself being injurious to health. Such impression is erroneous in nearly every case. Oleomargarine, for instance, is a mixture of milk, cream, butter, suet fat, lard, cottonseed oil in the lower grades, and salt, with a very small proportion of coloring matter, annatto, used by farmers to produce the rich golden tint in their butters. The greatest cleanliness is observed throughout its manufacture, and the finished product, as well as all its ingredients are perfectly pure and wholesome articles of food.

Food adulteration is carried on by manufacturers in the interest of pecuniary profit and gain, and they take pains to keep themselves well posted on the subject of cheap and harmless substitutes. This is well illustrated in the most recent form of milk adulteration. The whole milk is placed in centrifugal machines and nearly all the cream, fat removed. The machines are then stopped, another drum called the mulsifier put in, or sometimes the same machine is used, the machine restarted: and a charge of cottonseed oil or melted "oleo oil" is then, together with the warmed skim milk, run in sufficiently to bring up the fat contents and specific gravity to those of ordinary milk. A description of such machines will be found in Engineering, vol. 44, 1887, p. 478. The manufacturers of these machines also describe such emulsifiers in their catalogues.

It would be an impossible, not to say a ridiculous attempt to convince any court or jury

that ordinary potable water was either externally or internally "injurious to health," yet it is the most common adulterant used, The watering of milk is everywhere recognized as not only a fraud but also a very grave misdemeanor, if not actually a crime. This is the food on which the whole population under one year old is fed; and where the mother cannot supply the proper nourishment for the child she must depend for its bringing up on cow's or other milk. It is self-evident that a pint of watered milk does not contain the same amount of nourishment as the same volume of whole milk, so that a child or invalid might be actually starved to death if compelled to rely on the former for its sole nourishment.

Many drugs are used both in the arts and in medicine, different degrees of purity being demanded for these different uses. We have such substances as the mineral acids and alkalies, salts of arsenic, antimony, copper, lead, mercury, etc.: alkaloids as aconite, cocaine, morphine, strychnine, etc.; some organic acids and salts, that are found on the markets chemically pure, but which are universally conceded to be very "injurious to health," without any adulterations whatever. Whilst most medicines are drug, some are not drugs, and again many drugs are not medicines. So that the definition of a medicine should be clearly stated in any law on the subject.

The full returns of the samples examined by the public analysts of England, including London and fifty-four countries, unde tee Sale of Food and Drugs Acts, to which I have access is for the year 1886, and the totals and percentages are set forth in the following table:

Table showing the total number of samples submitted, under the Sale of Food and Drugs acts in the year 1886, to the public analysts of England, and the number and proportion adulterated.

Articles.	Examined.	Adulterated.	Per cent.
Milk	9,819	1,275	13·0
Bread	991	32	3·2
Flour	398	2	0·5
Butter	2,322	401	17·3
Coffee	1,506	241	15·0
Sugar	222	....	....
Mustard	817	104	12·7
Pickles	43	...	....
Jam	92	....	....
Confectionery	144	1	0·7
Wines	44	3	0·7
Beers	602	17	2·8
Spirits	2,297	410	17·8
Drugs	435	47	10·8
Other articles	3,774	280	7·4
Total	23,506	2,813	11·9

This table is interesting as showing the extent of adulterations practiced in the samples submitted for examination in the whole of England.

Any general law on food adulteration should clearly define the terms "adulteration," "alteration," "imitation" and "substitution." It should also consider the use of antiseptics, of harmful coloring matters, and of the products of diseased animals. A clear and concise definition of the different food products as well as an accurate statement of what shall be the minimum composition of the principal ingredients of the chief food products would also be very desirable.

In this latter regard we have such standards as are derived from the average composition of a large number of analyses of genuine samples of the special food product under consideration; for instance, the standards adopted by the English Society of Public Analysts for pure milk are as follows:

Specific gravity		1·030
Ash	per cent.	0·70
Solids, not fat	"	9·00
Fat	"	2·50
Total solids	"	11·50
Water	"	88·50

Those adopted by the Municipal Laboratory of Paris as the minimum limits for condemnation are:

	Per cent.
Fat	2·70
Milk sugar	4·50
Caseine, albumen and ash	4·30
Total solids	11·50
Water	88·50

In New York and New Jersey the legal standards are: Minimum amount of total solids, 12 per cent; maximum amount of water 88 per cent; and 3 per cent fat. In Massachusetts the milk must not contain more than 87 per cent. of water, nor less than 13 per cent. of milk solids.

The Union of Swiss analysts have adopted the following for milk: Specific gravity between 1·030 and 1·033; fat 3 per cent.

The law should be so worded and the penalties imposed for violations so severe that it will deter persons from engaging in the practice of adulteration of food products; in other words the risks incurred will not pay for any profit that might result from non-compliance with the law.

Possession or ownership of an adulterated article of food should be sufficient ground for conviction in a civil action without knowledge in the possession of the dealer tnat the same was adulterated, being demanded from the prosecution.

Many food products spoil in transportation, and penalties ranging from a nominal fine to imprisonment for a term of years should be provided, if, on account of dealing in and consumption of articles so spoiled, or in those injurious to health, a death or even a severe sickness is caused by the same.

The inspection of meat, fish, vegatables, fruit, and especially milk, should be done daily in any large city, and properly belongs to the health department of such city.

Provision should be made for the character of the packing and quality of the vessel, either metal or glass, in which food products are put up. Acid foods will attack and dissolve the solder with which tin packages are closed, and such foods should be put up in glass or acid-proof vessels. The drawing of liquids like beer, vinegar, etc., intended for food through lead or copper pipes should be prohibited, and iron or block-tin pipes only allowed.

Where samples of food products are received from the public at large they should be accompanied with an affidavit stating the facts in the case and a small fee for the analysis of the same should be paid in advance.

The law should provide for the procuring, by purchase or otherwise, of a sufficient sample and of properly identifying the same. Also for the proper chemical or physical examination by competent analysts, including the salaries of the force employed, the fitting up and maintaining a properly equipped laboratory, including chemicals, apparatus and the purchase of samples by duly authorized agents.

All adulterated goods, when sold as such, should be so branded with the word "Adulterated," or the words "This is a mixture," in letters printed in broad-faced type at least one inch long and affixed in a secure and conspicuous place either by a label to the vessel containing the goods or on the goods themselves, and likewise such goods should be wrapped in paper or other covering with said words printed on both sides of the wrapper.

STATE LAWS ON THE ADULTERATION OF FOOD AND DRUGS, DAIRY PRODUCTS AND BUTTER SUBSTITUTES.

Alabama—Act February 28, 1887.

Arizona—Act March 8, 1883.

Arkansas—No law now in force in this State.

California—Acts March 12, 1870; March 2, 1881; March 1, 1883.

Colorado—Acts May 20, 1881; April 6, 1885.

Connecticut—Chapter 108, 1879; chapter 84, 1880; chapter 122, 1881; chapter 123, 1886; chapters 74, 85, 1887.

Dakota—Butter substitutes, act of March 10, 1885; food and drugs, act Jan. 11, 1865.

Delaware—Acts February 10, 1879; March 21, 1883.

Florida—Chapter 80, sections 34, 35, 1881.

Georgia—Sections 3,003, 3,004, Code 1882; acts 1882-83, No. 329.

Idaho—Revised Statutes of 1887, sections 6,916 to 6,919.

Illinois—Chapter 38, Criminal Code 1885, sections 7, 8, 9, a, b, c, d, e, f, g, h, 10, 39, a, b, c, 62, 63, 104, a, b, c.

Indiana—Revised Statutes, section 2,071; act March 3, 1883.

Iowa—Chapter 52, 1886; chapter 98, 1888; section 4,042 Code.

Kansas—Compiled Laws of 1885, chapter 31, sections 260, 276, 277, 278, 336 and 337; Laws of 1887, chapter 174, page 256, relating to practice of pharmacy.

Kentucky—Section XVII, article XVII, chapter 28, Revised Statutes, as to selling poisonous drugs.

Louisiana—Chapter 20, 1880; chapter 82, 1882; act March 8, 1886.

Maine—Revised Statutes 128; act March 3, 1885.

Maryland—Chapter 493, 1878; chapter 493, 1884; chapter 248, 1884; act April 7, 1886.

Massachusetts—Public Statutes, chapters 56, 57, 58, 60, 206; chapter 263, 1882; chapter 257, 1883; chapters 299, 307, 310, 1884; chapters 149, 150, 352, 1885; chapters 317, 318, 1886.

Michigan—Act June 12, 1885.

Minnesota—Chapter 149, 1885; chapters 140, 141, 1887.

Mississippi—No law relative to adulteration of food or drugs found in the compilation on file in this department.

Missouri—Revised Statutes 1879, sections 1,595, 1,596, 1,597, 1,598, 1,599, 1,600; Laws 1881, p. 130; Laws 1885, p. 149; Laws 1887, p. 174; Laws 1888, p. 89.

Montana—Compiled Statutes of March 1, 1887, chapter 10, fifth division, title "Offenses against Public Morality, Health and Police."

Nebraska—Section 2,345.

Nevada—General Statutes, sections 4,718, 4,810, 4,811, 4,812.

New Hampshire—Chapter 57, 1881; chapter, 68, 1885; chapters 122, 127, 271, 1887.

New Jersey—Laws of 1881—An act to prevent the adulteration of drugs, Ch. ccxvii.; 1882—An act to prevent the adulteration and regulate the sale of milk, Ch. lxxxii.; 1883—An act as to adulteration of foods, Ch. cxxxix.; 1883—An act relative to skimmed milk, Ch. clxxxv.; 1884—An act to prevent adulteration and to regulate the sale of milk, Ch. xc.; 1885—An act entitled "An act to amend an act as to impure and imitation dairy products," Ch. xciii. (see also act of 1884, approved May 5, 1884); 1886—Oleomargarine act, Ch. lxxxiv.; 1887—See Chapters cxxvi. and cxlix.

New Mexico—Compiled Laws of 1884; Laws of 27th Legislative Assembly.

New York—Chapter 544, 1864; chapter 220, 1878; chapter 407, 1881; chapter 202, 1884; chapters 183, 199, 427, 458, 1885; chapter 577, 1886 chapters 223, 490, 583, 1887; chapters 298, 550, 1888.

North Carolina—No legislation on these subjects.

Ohio—Act April 27, 1885; act March 20, 1887.

Oregon—Act February 20, 1885; act April 25, 1885; act February 17, 1887.

Pennsylvania—Act May 24, 1883; act May 21, 1885.

Rhode Island—Public Statutes of 1882, chapters 84, 126, 127, 131 and 245; act March 22, 1882, chapter 276; act April 14, 1886, chapter 560.

South Carolina—Act ——, 1885; act to prevent and punish the adulteration of food and drink.

Tennessee—Code 1814, chapter 14, sections 2,682, 2,683, 2,684.

Texas—Penal Code, articles 392, 393, 394, 395. No laws on butter.

Utah—Title X, 1876, sections 2,037, 2,039, 2,040.

Vermont—Chapter 51, 1855; chapter 76, 1870; chapter 192, 1874; act November 18, 1886.

Virginia—Code 1873, chapter 865, title 26, section 56; Code 1887, sections 1,900, 1,901, 3,812.

Washington Territory—No law now in force in the Territory.

West Virginia—Chapter 41, 1885.

Wisconsin—Revised Statutes 1878, chapter 61, sections 1,494, 4,607; chapter 361, 1885; chapters 157, 185, 204, 1887.

Wyoming—Revised Statutes, sections 1,006, 1,007, 1,008; chapter 21, section 12, 1886.

Margosa Oil.

By C. J. H. WARDEN, Chemical Examiner to the Bengal Government.

Margosa oil is the oil extracted from the almonds of the Melia azadirachta, natural order Meliaceæ, a tree common in India, and known under the name of "nim." The bark, leaves fruit, and oil are held in high esteem by native and many European practitioners as remedial agents of value, a tincture and a decoction of the bark and a poultice of the fresh leaves being officinal in the Pharmacopœia of India. Preparations of the bark are considered effectual as antiperiodics, chiefly in the milder forms of periodical fever, and as tonics in convalescence after febrile and inflammatory affections. The poultice of "nim" leaves is a common domestic remedy with natives and is used as a stimulant application to indolent and ill-conditioned ulcers. The oil is used as an external application in rheumatism and as an anthelmintic, and is reported by Dr. A. Hunter to be an insecticide.

Margosa bark was examined by Cornish in 1857, who isolated an alkaloid, which he described under the name of "margosin." The later researches of Broughton, however, indicate that Cornish's bitter alkaloid is probably an amorphous resin. From the bitter oil of the seeds Cornish extracted an acid which he termed "margosic acid," but which he doubted to be capable of affording crystallizable salts. Lepine, who examined the oil, found it to have a specific gravity of 0·921, and he describes it as possessing a bitter taste and a garlic-like odor, to congeal at + 7° C., and to yield by saponification 35 per cent. of fatty acids melting at 30° C. and 65 per cent. melting at 44° C. Subsequent writers on Indian materia medica have quoted Lepine's results, but as far as I am aware no additions to Lepine's results have been published.

The margosa oil used in the investigation described in this communication was obtained by expression in my laboratory; there can therefore be no doubt regarding the genuineness of the sample. The fruit was washed to separate pulp, the stones dried, cracked, and the almonds exposed to a gentle heat for some time to remove moisture. The dried almonds were then crushed, placed in a cloth bag and the oil expressed. It was found very necessary to first dry the almonds before subjecting them to pressure; without adopting this precaution a white, creamy fluid was obtained, instead of clear oil, from which it was subsequently impossible to separate the oil, except by ether or other solvent.

The oil thus obtained was filtered through filter paper before it was examined. Directly after filtration the oil, when viewed in bulk, had a slight greenish coloration by transmitted light, owing to some of the almonds not having been quite ripe and to solution of traces of chlorophyl in the oil. Viewed in a thin stratum, the color of the oil was yellowish. The oil possessed a powerful garlic-like odor and was very bitter. The specific gravity at 15·5° C. was 9235; at about 10°—7° C. the oil congeals, without losing its transparency. After standing for about thirty-six hours the recently expressed oil deposited a white sediment, which, examined microscopically, was found to be amorphous.

The color reactions of margosa oil were not characteristic. With concentrated sulphuric acid a rich brown color was yielded, and a strong garlic odor evolved. By Massie's test with nitric acid, the oil became almost immediately of a reddish color; after standing about one hour and thirty minues the color was pale yellow. The elaidin reaction, conducted according to Pontet's directions, yielded a solid, firm, yellowish product after eighteen hours, the temperatuee in the laboratory varying between 89° and 93° F. Exposed in a thin layer on a glass plate to a temperature of 100° C. for some days, the oil did not dry or become tacky. The oil was easily solubie in ether, chloroform, carbon bisulphide, benzole, etc. Absolute alcohol agitated with it was colored greenish; on separating the alcohol, and evaporating off the spirit, an extract was obtained which consisted of oil, from which a small residue, whitish in color, separated on standing. The alcoholic extract was very bitter and possessed in a marked degree the peculiar odor of the oil. The whitish residue deposited from the oil, separated by alcohol and examined microscopically, did not appear crystalline. Margosa oil, ofter repeated agitation with alcohol, was found to have lost its bitterness and almost wholly its alliaceous odor.

A known weight of the oil was saponified with alcoholic potash, the alcohol completely evaporated off, and the soap dissolved in water. On agitating the aqueous solution of the soap with ether, 1·60 per cent. of ether extract was obtained of an orange-yellow color and bitter. This extract treated with 60 per cent. alcohol left the small amount of white residue, which had the character of a wax. The aqueous solution of the soap, after separation of the ether, was heated for some time to remove dissolved ether, the solution was then mixed with dilute sulphuric acid in excess, and the insoluble separated from the soluble fatty acids in the manner recommended by Allen. The soluble fatty acids amounted to 3·519 per cent., the insoluble to 89·128 per cent. The volatile acids consisted of butyric and a trace of valeric acid. During the distillation to separate the fluid from the volatile fatty acids, a small amount of a snow white fatty acid passed over; this acid had a melting point of 43·6° C., which corresponds with the fusing point of lauric acid. A weighed portion of the insoluble fatty acids from which the lauric acid had not been separated, was dissolved in alcohol and titrated with normal standard soda, using phenolphthalein as an indicator, 0·288 gram of the acids required 1 c.c. of caustic soda for neutralization. No attempt at separating the fixed fatty acids was made; they probably consisted of a mixture of stearic and oleic acids, with a small amount of lauric acid.

Examined by Reichert's distillation process, 2·5 grms. of the oil gave a distillate which, after separation of the lauric acid, which had distilled over, required 4·6 c.c. of decinormal soda for neutralization, phenolphthalein being used as an indicator.

The saponification equivalent of the oil was determined by Koettstorfer's method, and was equal to 284, the percentage of caustic potash required to saponify the oil being 19·72.

A preliminary examination of the oil having indicated the presence of sulphur, a quantitative estimation of the amount present was made, and found equal to 0·427 per cent. The oil, after repeated agitation with alcohol, was found to contain only 0·100 per cent. of sulphur.

The extract obtained by agitating the oil with absolute alcohol has already been referred to; it was examined in the following manner: The oily extract was treated with 60 per cent. spirit, allowed to stand, and the clear yellow alcoholic solution decanted from the insoluble oil; the alcoholic solution thus obtained was evaported to dryness, mixed with ammonia, and agitated with ether, The ether solution was marked A. The aqueous solution after separation of the ether, was mixed with dilute hydrochloric acid, and again agitated with ether. The ether separated of a dirty yellow hue, which refused to dissolve after prolonged agitation. The ether solution was marked B. From the aqueous solution the insoluble flocks were separated by filtration and marked C. The filtrate was not further examined.

Examination of Ether Solution A.—The solution was agitated with dilute hydrochloric acid, to remove any principles of an alkaloidal nature. The ether was then separated and evaported; the resulting extract was pale amber in color, viscid at first, very bitter, and had a marked odor of the oil. It contained sulphur. It was easily soluble in 60 per cent. alcohol, ether, chloroform, etc., but insoluble in acids or in caustic alkaline solutions. It had the properties of a neutral resin.

The hydrobhloric acid solution was of a yellow color; it was mixed with ammonia, which occasioned a white precipitate, and agitated with ether. The ethereal solution on evaporation left a yellow residue, not readily soluble in dilute acids. The dilute sulphuric acid solution was bitter, and yielded a precipitate with alkaline carbonates and hydrates, phosphomolybdic and picric acids, potassio-mercuric iodide, chloride of gold, and perchloride af platinum. This principle had, therefore, the properties of an alkaloid.

Ether Solution B.—On evaporating the ether solution B, a dark reddish bitter extract was obtained, soluble in alkaline solutions, and reprecipitated in yellowish flocks by dilute acids. It had the properties of acid resin.

Precipitate C.—The precipitate was well washed and dissolved in alcohol; on evaporation a brittle, darkish residue was obtained, soluble in alkaline solutions, reprecipitated in yellowish flocks by acids, soluble with very great difficulty in ether, easily soluble in chloroform. This principle thus also had the properties of an acid resin.

In addition to the principles above described as being present in the oil, an examination of the cake left after expression of the oil indicated the presence of another neutral principle, insoluble in ether or alkaline solutions, but dissolving in chloroform.

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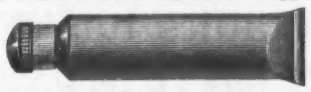

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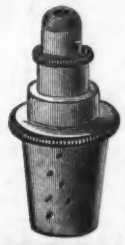

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DRUG MARKET.

Note—*Our prices are for large lot except when otherwise specified, and buyers of small quantities must expect to pay an advance on these figures.*
The prices current will be found on pages 49 and 50.

TUESDAY EVENING, Dec. 25, 1888.

The jobbing trade in drugs continues fair, considering the season, but there are very few large buyers in the market. In some lines there is a tendency toward a lower basis of values, while in others the buoyancy which has characterized many of the leading articles on the list for some months past is still observable. Important fluctuations in prices have been few, among them being a decline in the price of quinine in second hands and a sharp advance in American saffron. Below are noted the principle changes occurring within the week:

ADVANCED.	DECLINED.
American Saffron.	Quinine, 2d hands.
Musk.	Civet.
Golden Seal.	Oil Peppermint.
Colchicum seed.	Oil Sassafras.
	Gum Guiac.

Opium.

The market for opium appears to be hardening, though the upward movement is making slow progress. For ordinary $2 97½ is demanded by some holders, but $2 95 will probably buy, and we understand that on Saturday a lot was offered at $2 90. There have been further inquiries, but buyers and sellers appear to be apart in their views and comparatively little business has been done. We hear of sales of 30 cases at $2 90@2 95. For natural holders want $3 15@3 20, but we have not heard of any selling, except a few single cases. The London market is reported strong at 10@14s according to quality, and Smyrna advices indicate a firm feeling there.

Morphine is held firmly by the domestic manufacturers at former prices, which however, would probably be shaded slightly by outside holders. Advices from London report an advance of 5s there, with the added information that the manufacturers have nothing to offer.

Quinine.

The easier feeling in the market for quinine which was noted last week has been growing, and it is reported that some brand can now be bought at 30c, and on a firm offer, possibly at a shade less. There is little disposition to buy in a large way on the spot though the jobbing demand is reported to be fair for the season. For small lots 32@33c are the quotations, according to brand, quantity and seller. For future delivery there has been rather more inquiry, as a result of the lower prices named by foreign makers, and we note sales of 30,000 ozs for January-February, at a private price, said to be 30c. In some quarters higher prices are anticipated to follow the present depression at an early date, the low figures named by the foreign manufacturers, and their apparent anxiety to book contracts for forward delivery being thought to be the result of a desire to influence bark sellers.

Receipts of quinine for the week....	8,000
Since Jan. 1.....	1,864,252
Corresponding period last year.....	1,850,986

Miscellaneous.

Alcohol meets with a steady jobbing demand, the sales in the aggregate representing a large quantity. Prices are maintained and we repeat our quotations of $2 18@2 20 as to quantity.

Borax is without change. The demand in a jobbing way is fair and prices are well supported. We continue our quotations at 8@8 ¼c for concentrated, 9@9½c for California refined and 9¼c for city refined.

Bromide of potash is attracting fresh attention because of reports cabled here to parties other than the agent of the European syndicate, to the effect that no more of the foreign is to be sent here. This would indicate that the bromide war is over. The news has stimulated the demand, and all the foreign stock here has been taken for consumption. There are, however, two lots on the way which, if the above report is correct, will be reshipped on arrival. Domestic is still quoted at 33c in bulk.

Civet has declined and is now quoted at $3 75. We hear of no sales.

Colocynth apples remain very firm, and are offered sparingly. There is some inquiry, but the limited offerings restrict business. The last reported sales were at 46c for Trieste and 28c for Spanish, the latter to arrive.

Cuttlefish bone is still unsettled but is without quotable change, 19c being the genera quotation. At this price there is a good jobbing demand.

Cod liver oil is moderately active, but small lots attract the most attention. Norwegian is quoted at $20@24 per barrel, and Newfoundland, for which there is little inquiry, at 60@65c per gallon.

Ergot has been in good demand, but there have been no further important transactions A lot of new crop Spanish has arrived in London, and a quantity is also reported to be on the way to this market. The tendency of prices is still upward, but there has been no further quotable change.

Insect powder is still unsettled, and a range

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We quote:	per oz.
Sulfonal-Bayer, in oz. bottles	$2.00
In lots 10 ozs., " "	1.90
" 25 " " "	1.85
" 50 " " "	1.80
" 100 " " "	1.75
In ½ ounce bottles five cents per ounce additional.	
Tablets Sulfonal-Bayer, 15 grains (10 in tube) per tube,	1.00
Tablets Sulfonal-Bayer, 15 grains (100 in bottle) per 100,	9.00
Tablets Sulfonal-Bayer, 5 grains (10 in tube) per tube	.40
Tablets Sulfonal-Bayer, 5 grains (100 in bottle) per 100,	3.00
Soluble Pills Sulfonal-Bayer 5 grains, per 100	*3.75

**Pills subject to usual discount.*

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Sulphate of Cinchonine,	Sulphate of Morphine,	C. P. Acids,
Sulphate of Cinchonidine,	Acetate of Morphine,	Tannin,
Sulphate of Quinidine,	Muriate of Morphine,	Resublimed Iodine,
Bromide of Ammonium,	Nitrate of Ammonia,	Ether.

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1100 East Cumberland St., Phila., Pa.

Manufacturer of all Kinds of Chemical Stoneware for Manufacturing Chemists Also Chemical Bricks for Glover Towers

JOHN J. THOMSEN,
151 W. Balto., and 66 & 68 German Sts.,
BALTIMORE, MD.,
IMPORTER AND EXPORTER OF
DRUGS
AMERICAN INDIGENOUS
OILS, ROOTS, PAPERS, HERBS
A SPECIALTY.

of 35@50c as to brand and quality is quoted. There have been further inquiries for future delivery, but there are no sales reported.

Glycerine occupies the same position as when we last wrote. The market is very firm, in sympathy with crude, but there is no quotable change in price, and little prospect of an early advance. The demand is good for the season.

Lycopodium is stronger, with an upward tendency, but is still procurable at 36@37c. Being out of season, little demand is experienced.

Quicksilver is neglected, and is nominally quoted at 60@63c, as to quantity and seller. We are indebted to Messrs. J. Bennett Bros. for the following particulars of the statistical position in London:

	Bottles about. 1887.	1888.
Imports from January 1st to November 30th	59,012	67,050
Exports from January 1st to November 30th	60,195	43,940
Imports for November	374	1,273
Exports for November	6,118	4,143
Price per bottle about	£10	£9 10s
Stock in London to November 30th roughly calculated	39,000	47,000

Balsams.

Balsam copaiba is very firm, there being no further offerings from first hands. There is a moderate jobbing demand at former prices. Other balsams are dull and without fresh features of interest.

Barks.

The only article on the list that attracts more than passing attention is cascara sagrada, which is extremely scarce and in active demand. In a jobbing way only, is business possible owing to the limited offerings of stock, the most important sale being a particularly fine lot of 500 lbs which was taken for export at about 45c. Several smaller lots for home use have changed hands at 40c.

Essential Oils.

There have been few buyers in this market for more than small jobbing lots the past week, and a very quiet feeling prevails, though most of the articles on the list may be written steady.

Anise oil is firmer with $1 65 generally quoted as the inside price. The demand continues, and further sales of 20 cases are reported on private terms, supposed to be $1 60@1 62½.

Cassia oil, though quite firm at 82½@85c, is very quiet, and no business of consequence has come under our notice since the date of last writing.

Peppermint oil is easier as the result of pressure to sell in some quarters it is said. The nominal quotations for tin oil are $2 30@2 40 for Western and $2 60 for Wayne County, but it is thought that these figures would be shaded. The demand is unimportant. For H. G. H. $3 10@3 25 as to holder is nominally quoted, but there are no buyers. Sassafras oil is beginning to arrive quite freely, and as a result an easier feeling prevails. In a jobbing way there have been sales of 15 cans at 65c, but there are sellers of larger quantities at 60@62c.

Flowers.

The market for flowers is for the most part uninteresting. Buyers confine their purchases to such lots as they have immediate use for, and prices throughout are almost entirely nominal. American saffron forms a striking exception, having sharply advanced from 18c to 25c within the last few days. There has been a brisk speculative demand, and the various outside lots have been bought up, thus concentrating the spot supply. The sales reported aggregate about 26 bales for which up to 23c was paid. This is the highest price so far realized, but at the close there was nothing procurable below 25c. The new crop is all in, and is said to be controlled by one operator. It is reported to be much below the average.

Gums.

For most descriptions the demand is of a moderate jobbing character and no particular activity is noted in any line. Prices generally are steady, the only noticeable exception being gum c, which is again reported easier, being now procurable at 18@25c.

Roots.

In this department there has been little occurring out of the ordinary. Small purchases for current wants make up the sum of most of the business transacted, while prices as a rule have remained at the figures last quoted. A reaction in the market for golden seal is noted. Everything obtainable in the Southwest at less than 40c is reported to have been bought up, the sales in the last three or four days aggregating 10,000 lbs. All the weak holders have sold out, it is said, and the market is again buoyant at 45@48c, with still higher prices expected as the result of the concentration of the available supply.

Seeds.

There is little of interest to report in this department, the demand being of a moderate jobbing character with prices steadily maintained. The only change of consequence is in colchicum seed which, owing to very meagre supplies has advanced to $1.

Shellac.

The market for shellac is still tending upward and an early advance in spot prices is expected in view of the steady improvement in the other principal markets of the world. The statistical position is more favorable to high prices than it has been for many years. Cables received last Saturday state that it is estimated that the shipments for November to February, inclusive, are estimated at one-third of those of the corresponding period last year. The larger Calcutta houses are reported to have withdrawn all offers, and are buying, largely, spot goods in London. The same cable intimates that Calcutta prices will go higher in January. London advices report T N quality 2s higher than at the last sale. Here the demand for large lots has continued quite brisk, but the restricted offerings have prevented much business. The reported transactions amount to 800 cases including S. S., Diamond I. and Octagon B. It is reported that this includes everything obtainable at a shade under the market rates, on the spot or to arrive. A. C. Garnet is very scarce and holders now want 12½c, which is an advance of ½c.

Spices.

The jobbing demand for spices has been moderate, buyers showing little disposition to place orders, owing to the near approach of the new year. There has been no business of consequence in any line since the date of last writing, but prices as a rule are well maintained.

Mr. Clayton Rockhill received a cable on Monday from Leipzic, Germany, announcing that he had been appointed American agent for Bruder & Richter, manufacturers of essential oils and exporters of crude drugs.

Mr. J. H. Z. Stallman, who is permanently stationed in London as manager of the branch house of Stallman & Fulton, arrived in New York on the Servia Monday afternoon. He came on a special mission, and on Friday evening, December 28, will lead to the marriage altar Miss Bertha Conradi, an accomplished young lady of Harlem. After a reception at the elegant home of the groom's parents, the couple will take passage on the Servia, which sails on the following day. Mr. Stallman has been very successful in his European business, and his duties are so urgent that a longer absence was not deemed advisable. Our best wishes are extended to the happy pair.

Creolin.

Creolin, the new antiseptic, is a product of the dry distillation of certain kinds of English coal. It occurs as a dark brown, syrupy fluid, having a strong tarry odor. It mixes in all proportions with water, oil and glycerine, and is soluble in alcohol. The watery mixtures have at first a milk-white color, but on standing a finely flocculent precipitate separates and the mixture assumes a brown color. Creolin is a "secret" preparation, and is, moreover, a mixture and not a definite chemical compound, and Liebreich has very properly called attention to the fact that under the circumstances the makers can alter its composition as they see fit. However, Fisher's investigations (*Pharm. Zeitung*) go to prove that at present creolin has a pretty constant composition. He found in addition to a number of other coal bases, 18 per cent of naphthaine. He could find no trace of carbolic acid though it has been alleged that carbolate of sodium is one of the principal ingredients.—*Kuhlow's.*

Charras Essential Oils, Charras Pomades (Seillans),

CHARRAS & CO., 30 Platt St., New York.

DISTILLERIES—Nyons, (Drome) France.

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Special Oils Bergamot, Lemon, Sweet and Bitter Orange.

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PHILADELPHIA 1876. Group III. for Otto of Rose.

Otto of Rose, Opium, Gum Tragacanth,

PHILADELPHIA 1876. Group VI. for Gums, Opium, &c.

Wool and all Oriental Products.

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AUGUST GIESE, - 48 Cedar Street, NEW YORK.

TRADE MARK WH No 1866

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Offers his

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Druggists, Dry Plate Makers, Grocers, Confectioners, &c., &c., Through his Sole Agent for the U. S.,

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Julius Zeller has constantly on hand a full supply of all grades of goods manufactured by me.

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Raw Materials for Perfumers, etc.

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ALL GRADES.

HOWE & FRENCH, - - BOSTON.

RHUBARB!

ALL GRADES OF THIS ROOT:

WHOLE, CUT, CHIP, GROUND, SAWDUST and POWDERED.

Importers and Manufacturers,

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Johann Hoff's Malt Extract

Introduced into the United States by LEOPOLD HOFF in 1866
And sold from Hoff's Malt Extract Depot, 542 Broadway, N.Y.—LEOPOLD HOFF, Prop'r.
Agency Transferred to JOSEPH S. PEDERSEN in - - 1868
Depot, 2½ Murray Street, New York.
TARRANT & COMPANY appointed SOLE AGENTS in - 1869
278, 280 & 282 Greenwich Street, New York.

CAUTION.

The trade is particularly warned against a so-called Johann Hoff's Malt Extract, manufactured in Philadelphia, which is put up in squatty bottle and having the cork covered with yellow wax, in order to give the package a foreign appearance.

The Original and Genuine IMPORTED Johann Hoff's Malt Extract

is invariably put up in bottles as per cut, especially adapted for this market in 1869, and the preparation in this style of package is Guaranteed Genuine and Imported by the signature of TARRANT & CO, on the metallic cap, sole Importers and Agents.

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Wholesale and Importing Druggists,
278, 280 & 282 Greenwich St., New York.
EST'D. 1834.

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OFFER TO THE TRADE A FULL LINE OF
Scientific, Pharmaceutical, Technical Preparations & Chemicals
THROUGH THEIR AGENTS
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Strictly Chemically Pure Acids,
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Perfect Balances and Weights,
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Selected Drugs, Chemicals and Pharmaceutical Preparations
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Improved QUALITY,
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Lightest, Strongest, Cheapest.

ABSOLUTELY SAFE FOR MAILING LIQUIDS, OILS, SYRUPS AND OTHER SAMPLES.
Approved by the U. S. P. O. Dep't.

POST OFFICE DEPARTMENT.

Office of the General Superintendent of Railway Mail Service.
WASHINGTON, D. C., December 12, 1887.

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SIRS—I have *carefully* examined your Package, &c. This Package conforms in ALL RESPECTS to the requirements of the Department, and is suitable for the transmission of Liquids in the mails.
Very respectfully, T. E. NASH, *General Sup't.*

Made in any Size. SEND FOR SAMPLE AND PRICE LIST.
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Self Sealing Screw Top Cans.

NO EXTRA COST
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AS THEY
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ABSOLUTELY OIL AND AIR TIGHT.
MADE IN ALL LEADING SIZES.

Sole Manufacturers and Patentees:

POSTAL PACKAGE CO., No. 34 S. PACA ST., BALTIMORE, MD.

Loss of Weight in Spices.

The following is from a London standpoint as viewed by the *Grocer*.

Almost everybody is aware that by far the greater number of articles coming under the head of spices are usually sold at "landing weights," and only when they have been warehoused a considerable time is the rule relaxed in favor of buyers for the goods to be charged for at reweights, so that whatever deficiency may be shown to exist is at the risk and cost of the importers or holders themselves. But in cases (and they are numerous) where spices of different kinds are disposed of at the warrant weights, and are bought on that basis, it is no joking matter to find that, before the expiration of the three months' prompt, they have lost considerably in weight, and that notwithstanding the customary allowances of draft, &c., there is still a shortness in the quantity for which it is difficult to account All imported goods lose in weight more or less, as most descriptions of produce throw off a certain amount of moisture or undergo some sort of shrinkage when stored in a dry warehouse for any length of time, and when the bulk is re-weighed it often turns out to be lighter than supposed; but this natural process of attenuation or contraction is entirely different from that of which the dealers in spices complain, as the lightness of weight in the instances they name of pepper, pimento &c., proceeds from other causes, which may be hinted at rather than openly asserted. Too frequent sampling, not always ending with "re-drawn" samples, is no doubt responsible for a large percentage of the reduced weights, but that does not cover the whole of the grievance, for a mysterious disappearance of goods is known to take place in the warehouses where they are "free of duty," and cannot claim that absolute security from petty pilferings which is given to merchandise stored in bond under the surveillance of vigilant Custom House officers. Whether the employees of the dock companies, the wharfingers, or the lightermen are at all culpable in this respect we cannot say, and must leave that part of the question to be dealt with by those who have more intimate relations with the great storekeepers of London than we have; but we cannot avoid coming to the conclusion that in some way or other the goods must have been tampered with or purloined while in the charge of persons who should be made directly answerable for their safe custody. It is solely because no stringent measures have been adopted for the proper storage and delivery of spices, sago, or anything else in the same line of business that the irregularities and losses complained of have been allowed to go on until it was hardly possible for them to be overlooked or disregarded any longer; and now attention to the evil is once fairly aroused, we may shortly expect to see it gradually mitigated, if not completely removed.

Manufacture of Borax in Germany.

All the borax now manufactured in Germany is prepared from boronatrocalcite, commercially known as borate of lime or "tiza" ($Na_2B_4O_7 + 2\,CaB_4O_7 + 18\,H_2O$). It is found in large quantities in the north of Chili, at Maricunga, and Pedernal, and at Ascotan, which is situated about 90 miles from Antofagasta. It is also shipped from Rosario (Argentine), and in this case too is obtained from beds situated not far from Ascotan. The borate of lime from Ascotan is superior to that from Maricunga, as it contains on the average 34 per cent. of boron trioxide, as against 12 to 24 per cent.; it also contains much less calcium sulphate than the latter, and consequently requires much less soda for its decomposition. The borate of lime from Antofagasta goes direct to a syndicate in Hamburg, which consists of the three refineries, Heil & Sthamer, Morgenstern, Bigot & Co. and Julius Grossman. This syndicate also sells to other refineries at a price which is regulated according to the price of borax. Since the formation of the syndicate the price of borax has remained firm at 60 to 62 marks per 100 kilos during the last two years. The manufacture of borax from borate of lime is divided into four parts.

1. Boiling of the borate of lime with soda.
2. Working up the residual mud.
3. Fine crystallization.
4. Working up the lyes.

1. The borate of lime is coarsely ground in a disintegrater, and 2,500 kilos at a time of this are mixed with 4 to 5 times as much water. The mixture is heated directly by steam in a large vat provided with a powerful mixing apparatus. As soon as the mixture begins to boil, calcined soda is added. The quantity of the latter, which is necessary, depends on the amount of boron trioxide and calcium sulphate present in the borate of lime. The presence of too much sulphate spoils the quality of the lye. In this case much work and much steam are wasted in its removal. As a rule the soda should be added in slight excess. It is better still to use a mixture of equal parts of calcined soda and sodium bicarbonate, as in this case the boiling goes on quicker and the mixture is more fluid. The mixture should not be too alkaline, as in this case sodium metaborate ($NaBO_2 + 4\,H_2O$) is also obtained on crystallization, and as this only contains four molecules of water the loss is considerable. The reaction is—

$$Na_2B_4O_7 + Na_2CO_3 = 4\,NaBO_2 + CO_2.$$

On the other hand, if a slight excess of carbonate be not present, crystallization is very slow. When the soda is being added the mixture froths up violently, but this frothing can be easily overcome by shutting off the steam and adding cold water, which should be near at hand. When the boiling is over the mixture is allowed to settle, the supernatant lye syphoned off, and the sediment passed through a filter press. The lye should have an average concentration of 30°—35° Baume or more. The degree of concentration is regulated by the amount of sodium sulphate present. The lye is run into rectangular iron tanks of 1,000 to 1,500 liters capacity, and allowed to crystallize in a well-ventilated cool place. The crude borax, which contains about 40—50 per cent. of borax, 40 per cent. of sodium sulphate, and 10 per cent. of common salt, crystallizes out on the sides and bottom of the vessels in three or four days. The lye can be employed several times for the boiling, but when they get too concentrated it is best to evaporate them down. The crude borax then obtained contains sufficient borax to be worked up by the usual method, but the subsequent crystallizations, containg only 10 per cent of borax have to be specially worked up.

2. To obtain the borax still present in the filter-pressed sediment the latter is either lixiviated in the press or the cakes are removed and lixiviated with hot water. This lixiviation is necessary to obtain a good yield. The lyes thus obtained are boiled down and crystallized.

The crystallization vats used in the refining process are large iron rectangular vessels capable of holding 8 to 10 cbms. They are cased with wood and the interspace is packed with some non-conducting material, as it is very important that irregularities in cooling be avoided in order to obtain crystals of the necessary hardness and size. The crude borax is dissolved in pure water in quantity sufficient to obtain a boiling hot lye of 30° B. The fine lyes obtained can be several times employed for dissolving fresh quantities of crude borax; but as the amount of salt and sodium sulphate increases, the gravity of the solution is increased. Lyes which are too concentrated should not, however, be employed, for in this case octahedral borax containg five mols. of water crystallizes out at a high temperature, and loss is thereby entailed, as commercial prismatic borax contains 10 mols. of water. To remove iron and organic matter, which color the borax sodium, hypochlorite is added. This is obtained by digesting bleaching powder with sodium carbonate solution, and the clear liquid is added to the borax solution until the latter is limpid and gives no reaction with potassium ferrocyanide. The crystallization vats are all but filled with the borax solution and carefully covered up. After 10 to 14 days the temperature has sunk to 33°, and the borax crystallization is finished. At this temperature, too, the sodium sulphate begins to crystallize, so that at 33° the liquor must be run off. The borax crust (about 20 cm. thick) is then freed from mother liquor by sparging it with water or washing it with a sponge. It is then knocked off with a hammer, freed from adhering dirt, and dried in baskets at 30°, in a drying chamber, for 24 hours. Small imperfect crystals are then removed and the borax is finally packed into barrels lined with blue paper and capable of holding from 3 to 400 kilos.

4. A very important point is the working up of the large quantities of lye obtained in the crude and fine crystallization. The lye should not cotain too much sodium sulphate and salt. In winter the lyes which have previously been strongly concentrated are run into crystallization vats which are placed in the open air? The Glauber's salt then crystallizes out in large quantities. In summer crystallization is very difficult, and the sodium sulphate and salt have then to be boiled out. This, however, entails loss, as the hard crusts formed on the sides of the vessel contain 3 per cent. of borax, which is lost. The sodium sulphate thus obtained, as well as that (containing 10 per cent. of borax) obtained in the crude borax distillation, are mixed and gently heated, being stirred up and worked all the time until the sulphate just dissolves in its water of crystallization. The liquid is at once run off and the hard pieces of borax left are worked up in the fine crystallization. To obtain a satisfactory yield all loss by spilling should be avoided, and great care has to be exercised in the manufacture. Witting prefers iron to lead crystallization tanks, as they are much stronger, and after some use the sides become perfectly polished. With the present cheap soda he prefers the above method to the acid method, as the plant is not so seriously attacked, and considerable loss results in the latter method from boric acid being volatile with steam.—*F. Witting.*

BOURBON Vanillas. WILD Vanillas. MEXICAN Cut Vanillas. Angostura AND Surinam Tonquas. SEEDS.

"B & K" MEXICAN NEW CROP VANILLA BEANS

B. & K. Oils of CEDAR, LEMON ROSE, ORANGE SWEET. BERGAMOT, REFINED PARAFFINE. WAX.

BRANDT & KIENZLER, 160 Franklin St., N. Y.

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THE OTTO OF ROSE which this house distils and exports is known above all by the absolute purity of its quality and the unexcelled sweetness and strength of its odor. It is guaranteed to be the finest essence produced in the amous Rose Valley of Bulgaria.

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50 cases Gum Asafoetida,
30 " " " Cape Aloes,
100 boxes Gum Curacoa Aloes,
10 cases Soc. Aloes, (in monkey skins)
25 bales Italian Aniseed
25 " Arnica Flowers,
25 straps Cuttle Fish Bone,
100 bags Er. Foenugreek Seed,
20 bales German Fennel Seed,
20 cases Gum Guaiac,
150 bags Juniper Berries,
50 bales Laurel Leaves,
20 " Sweet Orange Peel,
10 " American Saffron,
20 " Select Alex. Senna,
20 " Broken " "
150 " Tinv. Senna, (all grades)
20 cases Powd. Sugar Milk,
50 bales Extra Select Licorice Root,
20 " Hond. Sarsaparilla,
100 " Gentian Root.

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THE SAME RELIABLE WORM DESTROYER,
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SOLE PROPRIETORS.

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CELEBRATED
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For sale at all Druggists. The trade supplied by
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Agents wanted in every town.
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This cut will be mailed to any dealer, who will use it in his paper space, to attract to same.

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Write for special offer. Liberal Adv' matter.
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for DRUGS, CASTOR BEANS, CHEMICALS, GREEN BONES, &c.

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Manufacturers,
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THE ALBERT DICKINSON CO.
Dealers in Timothy, Clover, Hungarian, Millet, Red Top, Blue Grass, Lawn Grass, Orchard Grass, Pop Corn, &c.
Specialties: FLAX SEED and BIRD SEEDS.
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☞Our Quotations are those of Importers and Manufacturers, for original packages and large lots. For broken lots higher prices are asked.

Oils, Etc.

Vegetable Oils.

Linseed Domestic Raw, in bbls, ₩ gal	.58	@59
Boiled, in bbls	—	@61
Calcutta, Raw, in bbls	.58	@60
Western on spot	.58	@57
Rapeseed, in bbls	.68	@70
Mustard	.60	@62½
Cottonseed, Crude Prime	.46	@47
Crude, off quality	.43	@45
Yellow Summer Prime	.55	@56
Yellow Summer, off qual	.52	@54
Yellow Summer, cooking	—	@—
White Summer	.55½	@56
Yellow Winter	.59	@60
White Winter	.59	@60
Soap stock	.25	@—
Olive, Sicily	.72	@75
Spanish	.74	@76
Soap Stock	—	@ 5¾
Palm, prime ₩ lb	—	@ 6½
Off quality	—	@ 5
Cocoanut, Domestic	—	@—
Ceylon	.5¾	@ 5¾
Cochin	.6¼	@ 6½
Castor, No. 2	—	@—
No. 3	.10½	@11
Rosin, first run ₩ gal.	—	@ 9
Second run	—	@12
Third run	—	@15
Deodorized	—	@18

Animal and Fish Oils.

Whale, natural winter ₩ gal.	—	@43
Bleached winter	—	@45
extra bleached winter	—	@47
Bleached spring	—	@43
Sperm, natural winter	.70	@73
Bleached winter	.75	@77
Natural spring	.64	@66
Bleached spring	.69	@70
Sea elephant, bleached winter	.55	@56
Unbleached winter	.50	@51
Lard, prime city	.70	@71
prime, western	.70	@71
Extra No. 1	.58	@61
No. 1	.50	@53
No. 2	.40	@50
Menhaden, prime crude	.32	@35
Prime southern	—	@—
Brown strained	—	@35
Light strained	.36	@37
Extra bleached white	—	@40
Bleached winter	—	@38
Bank	.34	@35
Straits	.35	@35
Herring	—	@—
Oleo	—	@—
Cod, Domestic, prime	.36	@37
Newfoundland	—	@—
Black Fish, Crude	—	@—
Natural	—	@—
Bleached Winter	—	@—
Degras, English	.2¾	@ 2¼
French	—	@—
Tallow, Prime	—	@.58
Neatsfoot, Prime	.76	@80
No. 1	.55	@60
No. 2	.45	@50
Saponified Red	—	@—
Elaine Red	.40	@43

Mineral Oils.

Paraffine, High viscosity ₩	.18	@19
23½@24 gravity	.11½	@12
25 gravity	.10½	@11
28 gravity	.8½	@ 9
Red Paraffine, 22 @23 gravity	.14	@14½
24@25 gravity	.12	@12½
Neutral filtered, 32 grav., bloomless	.18	@20
extra cold test	.22	@40
white, 35 gravity	.33	@35
34 gravity, bloomless	.16	@18
32 gravity, wool grade	.13	@15
West Virginia, natural, 29 gravity	.20	@25
Franklin, natural, 32 gravity	—	@—
Smith's Ferry, 33@34 gravity	.7½	@ 9
Black reduced, 29 gravity, 25@30 c. t.	.8	@ 9
29 gravity, 15 cold test	.8½	@ 9½
29 gravity, zero	.10	@11
Summer	.7	@ 7½
Cylinder, light filtered	.15	@20
dark filtered	.14	@21
extra cold test	—	@—
dark steam refined	.12	@18

Oil Cake.

Calcutta cake, city ₩ ton	31 00	@ —
City domestic	—	@28 25
Western, in bags	—	@28 00
Cottonseed cake at Memphis	20 25	@20 50
do do New Orleans	—	@24 75

Oil Meal.

State domestic meal ₩ ton	29 00	@ —
Cottonseed meal at Memphis	17 50	@18 00
do do New Orleans	25 00	@ —

Wax Candles, Lard, Tallow, Etc.

Paraffine wax, crude, 124@126 m p ₩ lb	4½	@ 4¾
128@130 m. p	4¾	@ 5
refined 135 m. p	—	@ 9½
Candles, Paraffine, 4s and 6s	9½	@11
12s	10	@12
Adamantine, 6s, 16 oz	9½	@10
14 oz	8½	@ 9
12 oz	7½	@ 8
12s, 16 oz	10½	@11
14 oz	9½	@ 9
12 oz	8½	@ 9
Patent sperm, 4s and 6s	.38	@39
☞ Sperm, 4s and 6s	.28	@29
Stearic acid	.11	@13
Spermaceti	.24	@25
Lard	.7 70	@ 9 80
Stearine	.7½	@ 9½
Tallow	.6	@ 6½

Naval Stores.

Sp. tur'tine	46¼	@46½	I	1 50	@—
St'd rosin	1 00	@1 02½	K	1 60	@1 65
G'd st'd	1 05	@1 07½	M	2 00	@—
E	1 15	@—	N	2 40	@2 45
F	1 20	@—	W G	—	@3 00
G	1 25	@—	W W	—	@3 50
H	1 30	@—			

Paints, Varnishes, Etc

White Lead, Zinc, Etc.

American Dry White Lead ₩ lb	6¾	@7
Pure White Lead, in oil	7	@7¼
English White Lead, in oil	8½	@8¾
Zinc White, Paris, G S, 80 bbls	7½	less 4 ₩ ct
G S, 25 bbls	7½	2 ₩ ct
G S, 10 bbls	7½	1 ₩ ct
R S, 50 bbls	6¾	4 ₩ ct
R S, 25 bbls	6¾	2 ₩ ct
R S, 10 bbls	6¾	1 ₩ ct
Antwerp R S, 50 bbls	6¾	4 ₩ ct
R S, 25 bbls	6¾	2 ₩ ct
R S, 10 bbls	6¾	1 ₩ ct
G S in poppy oil	10½	@10¾
R S in poppy oil	8¾	@ 9¼
French in Varnish	16	@20
American Extra Dry	4½	@ 4¾
Off color	4	@ 4½
In oil	6¼	@6¾
In varnish	14	@15¾
L. Z. O. German zinc	5½	@ 5
China white	10¾	@12
Flake white	10¾	@12
Cremnitz white	.15	@20

Dry Colors.

REDS

Carmine No. 40 ₩ lb	3 10	@4 20
Crocus martus, imported	1½	@ 2¼
Standard American	1½	@ 2¼
Colcothar	3½	@ 6
Indian red, American	3½	@ 6½
Standard American	2	@ 3
English	5½	@ 7
Tuscan red, English	9½	@ 11
Turkey red, English	9½	@ 14
Litharge, English flake	9	@ 9½
American powdered	6½	@ 6¾
Red lead, English	8½	@ 9
American	6¾	@ 7 ₩
Orange mineral, English	8¾	@ 9½
French	9½	@ 9¾
German	8¾	@ 9½
American	8	@ 8½
Rose pink, English	9	@ 9½
American	8	@ —
Vermilion, imported English	.82	@ .85
Am. quicksilver, bulk	.60	@ —
Am. quicksilver, bags	.61	@ —
Chinese	.88	@ .90
Trieste	.72	@ .77
American	10½	@ 11
Artificial	.8	@ .25
Venetian red,	1 40	@1 50
English prime	1 40	@1 50
second quality	1 05	@1 25
American	1 00	@1 35

YELLOWS

Chrome yellow	.10	@ .25
Ocher, Rochelle	1 35	@1 50
Washed Dutch	.5	@ —
Washed French	.5	@ —
Washed Nat Oxford, Lump	6½	@ 6¾
Washed Nat Oxford, Powd'r	7	@ 7½
Golden	3½	@ 4
Domestic	¾	@ 1½
Domestic, for O C & W P	¾	@ 1

GREENS.

Chrome, Chemically pure	.22	@.26
Extra	.12	@13
Super	.9	@11½
Common	—	@ 8
Paris, Pure	—	@—
In pulp	.11	@12
French Verdigris	.40	@42

BLUES.

Chinese Blue	.45	@50
Prussian Blue	.20	@35
Soluble Blue	.45	@55
Ultramarine Blue	7	@25
Celestial Blue	5½	@ 8
Blue verditer	.25	@30
refiners'	.60	@70

BROWNS.

Sienna, Italian, burnt & powdered	6	@ 6½
burnt lumps	3	@ 3½
raw powdered	6	@ 7
raw lumps	3½	@ 4
American, burnt & powdered	1¼	@ 1¾
raw	1¼	@ 1¾
Umber, Turkey, burnt and powdered	3½	@ 4
burnt lumps	2½	@ 3
raw and powdered	3½	@ 4
raw lumps	1½	@ 2¼
American, burnt	1½	@ 1¾
raw	1½	@ 1¾
Vandyke brown, English	6	@ 8
American	3	@ 3¾
Spanish brown	¾	@ 1

Miscellaneous.

Barytes, prime white ₩ ton	16 00	@18 00
foreign floated	19 00	@21 00
domestic floated	30 00	@32 00
off color	12 50	@14 00
Chalk	2 90	@ 3 00
kiln dried ₩ 100 lbs.	.40	@ —
air dried	.30	@ .35
China clay ₩ ton	13 00	@18 50
Cobalt oxide	2 60	@ 2 90
Feldspar ₩ ton	15 00	@ —
Silex	14 00	@25 00
Whiting, commercial ₩ 100 lbs.	.55	@ .60
gilders'	.70	@ .75
Paris white, English cliffstone	1 05	@ 1 15
American	.65	@ .80
French talc	1¼	@ 1½
terra alba	.85	@ .90
American terra alba No. 1	.75	@ .80
No. 2	.40	@ .45
Blanc fix ₩ lb.	2½	@ 3
Dentists' plaster ₩ bbl.	1 35	@ 1 50
Calcined plaster ₩ bbl.	1 25	@ 1 50
Marble dust ₩ bbl.	.90	@ 1 00
Pumice stone, original cks. ₩ lb.	1¾	@ 2
selected lumps in bbls.	3½	@ —
powdered pure in bbls.	2½	@ 2½
Rotten stone original cks	4½	@ 5
selected lumps	6	@ 10
powdered, in bbls.	3½	@ 3½
Rubbing stone	.5	@ 7
Bronze powder	—	@ —
Brocades	.45	@ 1 00
Smalt, German blue	.15	@ —
super black	—	@ —
Putty bulk	1¼	@ 2½
bladders	2	@ 2½
tins	—	@ 3½

Glues.

Extra white ₩ lb.	.17	@.20
Medium white	.13	@.15
Cabinet	.12	@.14
Low grade	.8	@.10
Foot stock, white	9½	@13½
brown	4	@ 8
Irish	12½	@14½
French	9½	@22½
English	10½	@.15

Metallic Paints.

Brown ₩ ton	$27 50	@32 50
Red	27 50	@32 50
Yellow	27 50	@32 50

Colors in Oil.

Black coach, Japan ₩ lb.	18½	@20
in oil	12	@13
Drop black	8½	@14½
Ivory black	8½	@14½
Lamp black	12	@20
Chinese blue	.35	@40
Prussian blue	.20	@45
Ultramarine blue	12	@18
Burnt sienna	7	@14
Raw sienna	7	@14
Burnt umber	7	@11
Vandyke brown	7	@11
Raw umber	7	@11
Vandyke brown	9	@12½
Chrome green	8	@14
Paris green	16	@18½
English drop black	12½	@14
American drop black	7½	@10
Frankfort drop black	.25	@30
Lampblack, prime	2½	@3
medium	1½	@2
2d quality	13	@19
low grade	6½	@10
Naphtha, black	.60	@—
Fine calcined velvet black	.16	@25
Medium calcined velvet black	.12	@15

Varnish Gums.

Copal, Sierra Leone, cleaned	.35	@.40
Zanzibar, bold white	.75	@.80
medium white	.65	@.70
bean and pea	.40	@.45
Manila, pale	.17	@.20
bright amber	.13	@.15
standard	8½	@10½
Damar, Batavia	.19	@.21
Kauri, standard	15½	@16
No. 2	.12	@.14
hard scraped	.22	@.24
light hard scraped	.28	@.30
picture quality	.65	@.70
pale and fine selected	.42	@.65
Sandrac	—	@.22
Asphaltum, Cuban, prime	4½	@ 5½
sandy	4	@ 5
Egyptian	8	@ 9

Glass.

PLATE AND WINDOW.

FRENCH SINGLE.

Prices per Fifty Feet.

Sizes.	1st.	2d.	3d.	4th.
6x 8 to 10x15	$10 50	$ 9 00	$ 8 50	$ 8 00
11x14 to 16x24	11 50	10 75	10 25	9 75
18x22 to 20x30	15 50	14 00	13 00	12 50
15x36 to 24x30	16 50	15 00	13 50	....
24x36 to 24x36	17 75	16 20	14 75	....
26x28 to 24x36	26 00	25 00	23 00	....
26x36 to 26x44	19 00	17 50	15 25	....
26x46 to 30x50	21 00	19 50	17 00	....
30x52 to 30x54	22 00	20 25	18 00	....
30x56 to 34x56	23 00	21 25	19 00	....
34x58 to 34x60	24 00	22 75	21 00	....
36x60 to 40x60	26 50	24 50	23 00	....

FRENCH DOUBLE.

Prices per Fifty Feet.

Sizes.	1st.	2d.	3d.	4th.
6x 8 to 10x15	$13 00	$12 50	$12 00	$11 50
11x14 to 16x24	16 00	15 00	14 50	....
18x22 to 20x30	20 50	19 50	18 50	....
15x36 to 24x30	22 00	20 75	19 50	....
26x28 to 24x36	25 00	23 00	21 50	....
26x36 to 26x44	19 00	17 50	16 25	....
26x46 to 30x50	28 00	26 50	24 50	....
30x52 to 30x54	30 00	28 00	26 00	....
30x56 to 30x56	31 00	30 00	28 00	....
34x58 to 34x60	32 50	31 00	29 00	....
36x60 to 40x60	36 00	33 50	32 00	....

Discounts:—75@75 & 10 for 8 & D.

AMERICAN SINGLE.

Sizes.	1st.	2d.	3d.	4th.
6x 8 to 10x15	$10 50	$ 9 00	$ 8 50	$ 8 00
11x14 to 16x24	11 50	10 75	10 25	9 75
18x22 to 20x30	15 50	14 00	13 00	12 50
15x36 to 24x30	16 50	15 00	13 50	....
26x28 to 24x36	17 75	16 25	14 75	....
26x36 to 26x44	19 00	17 50	15 25	....
26x46 to 30x50	21 00	19 50	17 00	....
30x52 to 30x54	22 00	20 25	18 00	....
30x56 to 34x56	23 00	21 25	19 00	....
34x58 to 34x60	24 00	22 75	21 00	....
36x60 to 40x60	26 50	24 50	23 00	....

AMERICAN DOUBLE.

Sizes.	1st.	2d.	3d.	4th.
6x 8 to 10x15	$13 00	$12 50	$11 00	$10 00
11x14 to 16x24	16 00	15 00	13 50	12 00
18x22 to 20x30	20 50	19 50	18 00	....
15x36 to 24x30	22 00	20 75	18 75	....
26x28 to 24x36	25 00	23 00	21 00	....
26x36 to 26x44	26 00	25 00	22 50	....
26x46 to 30x50	28 00	26 50	23 75	....
30x52 to 30x54	30 00	28 00	25 25	....
30x56 to 34x56	31 00	30 00	27 00	....
34x58 to 34x60	32 50	31 00	28 00	....
36x60 to 40x60	36 00	33 50	30 00	....

Discounts:—75&10@75&10&10.

Drugs.

Opium.

Opium, in bond ₩ lb.	2.1 95	@2 00
duty paid (cases)	.2 95	@3 20
as wanted	3 00	@3 25
powdered	4 00	@4 25
Morphine	2 40	@2 70
foreign	2 25	@2 30

Quinine.

Quinine, American ₩ oz.	.40	@ .47
English	—	@—
French	—	@—
German	.30	@ .45
Cinchonidia, American	.4	@ .5
foreign	2½	@ 3
Quinidia, German	.24	@ .29

Miscellaneous.

Acid benzoic, German ₩ lb.	42	@ .55
English ₩ oz.	11	@ 13
boracic purified ₩ lb.	.20	@ —
refined	.15	@ —
flaky	.14	@ —
carbolic, pure crystals	.29	@ .36
commercial	.28	@ .35
citric, domestic	.48	@ .50
foreign	.48	@ .50
salicylic, bulk & boxes	1 55	@1 62
foreign	.48	@ .50
Alcohol, 94 p ct, free ... per gal.	2 18	@ 2 20
refi'd wood, 95 p ct	—	@ 1 10
92 p ct	—	@ 1 05
dia methyl, 98 p ct	1 25	@ 1 28
Inodorine, 97-99 p ct	1 50	@ 1 60
Cologne spirits, 188 p t	2 28	@ 2 30
Ambergris gray	.22	@ .30
black	9 00	@12 00
Ammonia carb, foreign	7½	@ 8
domestic	8	@ 8½
Bay rum imp, bulk	1 95	@ 2 00
Barbadoes tar	.38	@ .40
Borax, refined city, bbls ₩ lb.	9½	@ —
Cal., bbls	9	@ 9½
concentrated	8	@ 8½
powdered	9	@ 9½
Bromine	.37	@ .38
Burgundy pitch	2¾	@ 3
Cantharides, Russian	1 25	@ 1 27
Chinese	.38	@ .40
Calomel, domestic	.73	@ .75
English	1 05	@ 1 10
Castile soap, white	10½	@ 10½
green, pure	8½	@ 9
mottled ordinary	4½	@ 4¾
pure	5½	@ 5¾
Chian turpentine ₩ oz.	.45	@ —
Chloroform	.40	@ .45
Colocynth apples, Trieste ₩ lb.	.46	@ .50
pressed	—	@ —
Spanish	.28	@ —
Cacao butter	.38	@ .42
Chloral hydrate, crystals	1 55	@ —
plates	1 25	@ —
Corrosive sublimate	.65	@ .67
Cuttlefish bone, Trieste	.19	@ 19½
Dragon's blood mass	.20	@ 23½
reed	.42	@ 47½
Ergot, Spanish	.40	@ .45
German	.20	@ —
Gelatine, English	.80	@ .90
French	.30	@ —
American	.85	@ —
Glucose	.2¾	@ 3¼
Grape sugar	.2¼	@ 3
Glycerine, German, refined, dms.	.17	@ —
Amer'n, ref. bbls & cs.	17½	@ 19
No. 1	.16	@ 17½
Glycerine, crude	.11	@ 13
Guarana, whole	1 25	@ 1 30
Powdered	1 35	@ 1 40
Iceland moss	4½	@—
Indian hemp (Canabis In)	.7	@ .12
Insect powder	.45	@ .50
Irish moss	.5	@ .10
Isinglass, Russian	.3 50	@ 3 75
American ordinary	.70	@ .75
prime	.90	@ 1 00
Iodine, re-sublimed	3 50	@—
Licorice paste, domestic	.13	@ .29
foreign	.24	@ .29
Lupulin, American ₩ lb	.70	@ —
German	.50	@ —
Lycopodium, prime	.36	@ .37
Manna, large flake	.70	@ .72½
Small flake	.32	@ .35
Sorts	.28	@ .32
Menthol	1 50	@ 2 00
Musk, true grain ₩ oz	40 00	@42 00
Tonquin pods	.25 00	@26 00
Canton grains	.20	@ 1 00
Nitrate barium ₩ lb	.8	@ 8½
Strontia ₩ lb	.9	@ 9½
Nux vomica, pockets ₩ lb	.3½	@ 3¾
Oil, almond, sweet	.20	@ .38
Myrbane, American	.16	@ .18
English	.16	@ .18
German	—	@—
Sesame ₩ bbl	.70	@ .75
Castor, city, bbls & cases	12½	@ 12¾
Cod liver Norwegian ₩ bbl	20 00	@25 00
Newf'land ₩ gal	.60	@ .65
Phosphorus ₩ lb	.70	@ .75
Precip, red	.83	@ .85
White	.88	@ .91
Precipitated chalk, Eng. bk	.5	@—
bbls	.7	@—
Potassium, bromide, bulk	.33	@ .34
glass	.42	@ .43
Iodide, bulk	2 70	@ 2 75
glass	2 78	@ 2 85
Quicksilver	.60	@ .63
Sago, pearl	3½	@ 3¾
Flour	3½	@ 4
Sugar of milk cob	.17	@ 17½
Powdered	.16	@ .17
Sulphur, roll	—	@ ¾
Flour	—	@ 2
Salicine	2 10	@ 2 15
Tamarinds ₩ keg	.5	@ 5 00
Venice turpentine ₩ lb	.18	@ .30
Wax, brown southern	.26	@ .27
State	.25	@ .26
Brazil	12½	@ .15
White, pure	.40	@ .45
Japan	12½	@ 13
Carnauba	.10	@ .16
Ceresin	10½	@ 11

Balsams.

Copaiba, Angostura ₩	2.67½	@ .70
Para	—	@ .65
Central American	.57½	@ .60
Fir, Canada ₩ gal	2 50	@2 75
Oregon	.90	@1 10
Peru ₩ lb	.95	@1 10
Tolu	.33	@ .34

Barks.

Angostura ₩ lb	.18	@ .20
Bayberry	.7	@ .8
Buckthorn	.8	@ .12
Cascara Sagrada	.40	@ .45
Cascarilla	.8	@ .10
Canella	.12	@ 12½
Cinchona, red	.30	@ .45
yellow	.2	@ .25
Coto	.9	@ .35
Elm, common	.9	@ 1
selected	—	@—
Loxa	—	@ .32
Oak, white	3½	@ 4
red	3½	@ 4
Orange peel, West Indian	.4	@ .6
Malaga, prime	.7	@ .10
Curacoa	.7½	@ .15
Prickly ash	.10	@ .12
Pomegranate (of root)	—	@—
Quebracho	.12	@—
Sassafras	.8	@—
Simaruba	.14	@ .20
Soap, whole	.5	@ .6
crushed	6½	@ 6¾

Beans.

Vanilla, Mexican ₩ lb	4 50	@13 00
Bourbon	2 50	@ 8 00
Tonka, Angostura	1 30	@ 1 40
Surinams	.80	@ .90
Para	.65	@ .70
Calabar	.22	@ .25
St. Ignatius	.50	@ .55

Berries.

Cubeb ₩ lb	1 40	@ 1 75
Juniper	3½	@ 4
Fish (Cocculus Ind)	.4	@ 4½
Laurel	.5	@—
Prickly ash	.20	@—

Essential Oils.

Anise ₩ lb	1 65	@ 1 70
Almond (bitter)	2 50	@ 6 75
Bay, ₩ bottle of 22 ozs	6 00	@ 6 50
Bay oil, ₩ lb	3 62½	@ 4 00
Bergamot	1 90	@ 2 25
Black pepper	.65	@ 5 50
Cajeput	67½	@ .70
Camphor	.7½	@ .11
Caraway, seed	1 05	@ 1 50
chaff	.40	@ 53½
Cassia	.8	@ .85
Citronella	.33	@ .35
Clove	1 45	@ 1 70
Copaiba	.90	@ .95
Croton	.95	@ 1 00
Cubebs	14 00	@14 50
Cumin, American	3 50	@ 5 50
Fennel	.85	@—
seed	1 50	@—
Geranium, Turkish	3 00	@ 3 50
rose, French	8 00	@ 9 50
Gingergrass	2 25	@—
Juniper, once rect	—	@ 1 10
twice rect	.75	@ 2 10
wood	.27	@ .37
Lavender, garden	.70	@ .85
flowers	2 00	@ 2 25
Lemon	1 00	@ 1 50
Lemongrass	.65	@ 67½
Neroli, bigarade	.40 00	@45 00
Portugal	.27 50	@—
Petale	.50 00	@—
Nutmeg	2 10	@ 2 35
Orange, sweet	1 15	@ 1 45
bitter	1 65	@ 4 00
Origanum	.18	@ .20
Peppermint, tin cans	2 50	@ 3 00
cases	3 10	@ 3 25
Pennyroyr	.90	@ 1 00
Rose, ordinary ₩ oz	4 25	@ 4 75
special brands	4 50	@ 5 25
Rosemary, Trieste ₩ lb	47½	@—
French	—	@ .26
Flowers	.70	@ 1 10

Sandalwood		2 25	@10 50
Sassafras		60	@ 65
Spearmint		2 00	@ 2 75
Tanzy		2 95	@ 3 50
Thyme, red		21	@ 83⅓
white		30	@ 1 10
Wintergreen		1 85	@ 1 90
Wormseed		1 50	@ —
Wormwood		4 50	@ 5 00

Flowers.

Arnica	℔	7½@	11
Chamomile, German		18	@ 25
Roman (new)		25	@ 40
Insect		35	@ 45
Lavender		3	@ 7
Rosemary		15	@ 20
Saffron, American		—	@ 25
Alicante		—	@10 00
Valencia		12 00	@15 00

Gums.

Aloes, Cape	℔	5½@	7
Barbadoes		19	@ 25
Curacoa		3½@	5
Socotrine		40	@ 52
Arabic, 1st picked		84½@	97
2d picked		74½@	77
3d picked		64½@	67
4th picked		74½@	57
Sorts		52	@ 70
Siftings		25	@ 40
Senegal, picked		54	@ 55
sorts		34	@ 40
Asafœtida		8½@	10
Benzoin		25	@ 40
Camphor, refined, in bbls		30	@ —
in cases		—	@ 31
Chicle		23	@ 24
Euphorbium		15	@ 17
Gamboge, pipe and block		56	@ 58
Gedda, siftings		—	@ —
sorts		22	@ 25
Guaiac		18	@ 20
Kino		11	@ 12
Mastic		82½@	85
Myrrh		39	@ 40
Olibanum, tears		15	@ 18
sorts		6½@	7½
Sandrac		24	@ 25
Scammony, Aleppo		25	@2 50
Virgin		7 50	@ —
Tragacanth, Aleppo, 1st flake		41	@ 43
2d flake		35	@ 38
3d flake		30	@ 32
Turkey, 1st flake		70	@ 75
2d flake		55	@ 57½
3d flake		40	@ 45

Herbs and Leaves.

Aconite	℔	9	@ 11
Althea		8	@ 10
Belladonna		12	@ 15
Buchu, short		5	@ 6
long		14	@ 55
Coca		25	@ 32
Damiana		26	@ 28
Digitalis		6	@ 9
Eucalyptus		4	@ 5½
Grindelia robusta		12	@ 14
Henbane (hyoscianus)		12	@ 14
Horehound		6	@ 8
Jaborandi		25	@ 27
Laurel		3½@	4
Lobelia		4	@ 7
Matico		20	@ 22
Marjoram, German		14	@ 20
French		9	@ 11
Prince's pine		—	@ 8
Rose, red		1 25	@1 40
pale		45	@ 50
Rosemary		3	@ 4
Sage, Italian		2½@	3½
Senna, Alex. nat		24	@ 25
siftings		19	@ 21
garbled and sifted		34	@ 35
Tinnivelly		10	@ 22
Thyme		4½@	10
Uva Ursi		4	@ 4½
Yerba Santa		12	@ 14

Roots.

Aconite	℔	10	@ 12
Alkanet		7½@	9
Althea, whole		12	@ 12½
cut		14	@ 16
Angelica, German		10	@ 12
American		9	@ 10
Arrowroot, Bermuda		31	@ 35
St. Vincent, bbls&cns		6½@	7
Jamaica		10	@ 11
Arnica		7½@	8
Belladonna		8	@ 12
Blood		10	@ 12
Burdock		7½@	8
Calamus, bleached		—	@ 40
unbl'd, split & peeled		19	@ 34
Canada snake, select		34	@ 36
Colchicum		—	@ 10
Colombo		8	@ 11
Culvers		15	@ 16
Dandelion, German		10	@ 12
American cut		11	@ 12
Elecampane		6	@ 8
Galangal		3	@ 3½
Gentian		4½@	5
Ginseng		2 50	@3 00
Ginger, Jamaica, unbleached		17	@ 17½
American, bleached		19	@ 19½
London, bleached		19	@ 19½
Golden seal		45	@ 48
Hellebore, white, powdered		9	@ 9½
whole		5½@	6
Ipecac, Rio		1 75	@1 85
Jalap		—	@ 12
Kava Kava		18	@ 20
Lady slipper		12	@ 15
Lovage, American		40	@ 50
German		9	@ 20
Licorice, ordinary		5	@ 7
selected, in bdls		12½@	20
Mandrake		—	@ 5
Orris, Florentine		13	@ 18
finger		45	@ 75
Verona		5	@ 6½
Pareira brava		20	@ 25
Pellitory		15	@ 18
Pink		25	@ 30
Rhatany		5	@ 8
Rhubarb, whole		60	@ 70
cut		40	@1 00
Sarsaparilla, Honduras		20	@ 30
Mexican		7½@	7½
American		6	@ —
Senega, Southern		—	@ 62
Western		55	@ 62
Serpentaria, Texas		25	@ 30
Stillingia		℔	@ 10
Squills, ordinary		—	@ 5
white, prime		5	@ 6
Valerian, German		10	@ 11
Belgian		5	@ 6
English		—	@ 17
Vermont		10	@ 11
Yellow dock		7	@ 9

Seeds.

Anise, Italian	℔	8	@ 10½
German		—	@ —
star		25	@ 26
Canary, Sicily		2½@	3
Smyrna		2¾@	2¾
Spanish		3½@	3½
Caraway, Dutch		6	@ 6½
German		—	@ —
Cardamom, Alleppy		55	@ 90
Malabar		70	@ 90
Mangalore		65	@1 50
Celery		8½@	—
Colchicum		—	@1 00
Clover		9	@ 11
Coriander, English		4½@	5
French		4½@	5
[redacted] German		4	@ 4½
Cummin		10	@ 12
Fennel, German		8	@ 10
Fœnugreek		2½@	3
Guinea grains		8½@	8½
Hemp, Russian		2½@	3
Smyrna		—	@ —
Lobelia		25	@ 30
Millet, domestic	bush.	1 10	@ —
foreign	℔	2½@	2½
Mustard, California yellow		3½@	3½
brown		3½@	4
Dutch		—	@ —
English		4½@	5
Trieste brown		5½@	7
Poppy		5½@	6½
Quince, German		55	@ 60
Russian		28	@ 30
Rape, domestic		3½@	4
English		4	@ —
German		3½@	4
Timothy		2½@	2½

Shellac.

D. C	℔	23	@ 25
Octagon B		20	@ 21
V. S. O		—	@ 21
Diamond I		19	@ 20
S. S		—	@ 18
Garnet, A C		12½@	13
T. N. quality		14	@ 14½
Natives		13	@ 14
Button		16	@ 18
Bleached		20	@ 21

Spices.

Cassia, Batavia	℔	6½@	7
China		13½@	—
Saigon, rolls		29	@30
broken		24	@26
chips		6	@ 8
buds		9½@	10
Cloves, prime, Zanzibar		21	@ —
Amboyna		27	@28
stems		5½@	5½
Ginger, African		4½@	4¾
Calcutta		3½@	3¾
Cochin		5½@	6
Mace, Batavia		90	@ —
Banda		81	@83
Penang		—	@83
Nutmegs, 110's		55	@57
Pepper, Singapore		15½@	15½
West Coast		14½@	15½
Acheen, prime		14½@	15½
Penang, white		—	@24
Singapore, white		—	@25½
red, Zanzibar		8	@—
Bombay		7	@—
Pimento, prime		6½@	7

Chemicals.

Heavy Chemicals.

Alkali, 36 ℔ cent		1 12½@	1 15
refined, high test		1 15	@1 25
Bleach, over 35 ℔ cent		1 87½@	2 12½
Saltcake		50	@ 57½
Soda ash, carb, 48 per cent		1 22½@	1 35
high test		1 12½@	1 15
Caustic, 48 ℔ cent		1 25	@1 45
high test		1 15	@1 20
Newcastle, 48 per cent		1 25	@1 37½
high test		1 15	@1 20
Soda bicarb, English		3 10	@3 35
American		3 00	@3 50
carbonate		1 75	@1 80
caustic, 60 ℔ cent		2 50	@2 65
70 ℔ cent		2 75	@3 35
74 ℔ cent		2 75	@3 35
76 ℔ cent		2 75	@3 35
sal, English		75	@3 80
American		95	@1 00

Acids.

Acid, acetic		2	@ 2¼
chemically pure		16	@ 17
pure		5½@	8½
oxalic		8½@	9
sulphuric, 60 deg		90	@ 95
66 deg		95	@1 25
muriatic, 18 deg		1 15	@1 20
20 deg		1 30	@1 50
22 deg		1 40	@1 80
nitric, 32 deg		4	@ 5½
36 deg		7½@	8
40 deg		11½@	12
42 deg		13½@	14
tartaric, crystals		42	@ 44
powdered		44	@ 45

Ammonias, Potashes and Fertilizing Chemicals.

Ashes, pot, 1st sorts	℔	4	@ 4¼
pearl		5	@ 5¾
Potash, chlorate, English		15	@ 15½
powdered		—	@ 15½
carb		4 70	@ 5
caustic		7½@	—
cyanide, fused		39	@ 40
pot muriate salt 80@85		1 20	@ 1 25
sulphate of, basis 90		2 40	@ 2½
Aqua ammonia (in chys) 18°	℔	2½@	3
19°		—	@ 3½
22°		—	@ 4
25°		6	@ 7
26°		10	@ 11
Ammonia, sal, rough		5½@	—
white		7½@	—
lump		8	@ —
sulphate		3 35	@ 3 45

Ammonias, Etc.:			
Azotine	℔ unit	2 55	@ 2 65
Blood, dried, red	℔ unit, west	2 65	@ 2 67½
low grade	℔ unit	2 50	@ 2 55
Bones, rough	℔ ton	18 00	@21 00
ground	℔ ton	25 00	@30 00
Bone black, refuse	℔ ton	19 50	@19 75
Kieserite		5 75	@ 6 25
Menhaden guano		25 00	@26 00
Phosphate rock, f. o. b. Charleston		5 50	@ 6 00
Phosphate rock, ground		10 00	@10 50
Acid phosphate, 14% per unit		75	@ 80
Potash muriate	℔ 100 ℔	1 82½@	1 95
Kainit, 23% S. of P.	℔ ton	10 50	@11 00
Manure Salts, 27@28% S. of P., per gross ton, in bags		11 50	@12 00

Miscellaneous.

Acetate of lime, gray		2 00	@2 10
brown		1 00	@ 1 05
Alum, lump		1¾@	1¾
ground		1¾@	2
Cake		1¾@	1¾
Argols, crude Oporto		—	@ —
plate		23	@ 24
half refined		28	@ 32
Arsenic, white		3	@ 3½
red		5½@	5¾
Brimstone crude, best 2ds		21 00	@23 00
3ds		19 75	@20 00
Copperas, ordinary		—	@ 62½
best grades		75	@ 1 00
powdered		1½@	1¾
Cream tartar, crystals, 99 p. c.		31	@ 31½
powdered, 99 p. c'.		31½@	32½
Glauber salts		75	@ 80
Epsom salts		1 15	@ 1 20
Nitrate of lead		9	@ 10
soda		2 37½@	2 40
Rochelle salts		28	@ 30
Sugar lead, brown		7½@	8
white		13	@ 13½
Saltpeter, crude		5½@	5¾
refined		6	@ 8
Vitriol, blue ordinary		5½@	6
extra		6	@ 6¾

Dyestuffs.

Acid picric best crystals	℔	50	@ 55
Albumen prime egg		72	@ 75
imported blood		20	@ 20
domestic blood		17	@ 19
No. 1½ blood		—	@ —
Alizarine		18½@	21
Annatto		12	@ 25
seed		4	@ 6
Archil weed		7	@ 15
Aurine		58	@ —
Barbary root, cut		4	@ —
Bichromate of potash, Scotch		11½@	12
American		11½@	12
Bichromate of soda		9½@	10
Carmine of indigo		40	@ —
Cochineal, Teneriffe silver		30	@ 32
black		30	@ 32
gray black		33	@ 35
Mexican		—	@ —
ammoniac		—	@ 37
Cudbear, French		2	@ —
concentrated		25	@ —
English		12	@ 30
Cutch, slab		7½@	7¾
bag		5½@	5¾
Dextrine		5½@	6
Divi divi	℔ ton	45 00	@55 00
Fullers earth, lump	℔	90	@ 95
powdered		1¾@	2
Flavine		21	@ 23
Fustic stick	℔ ton	33 00	@25 00
Gambier	℔	5½@	6
Garancine		8½@	9
Indigo, Bengal, low grade		78	@ 85
medium		1 10	@ 1 25
high grade		1 25	@ 1 40
Caracas		—	@ —
Kurpahs		75	@ 1 05
Gautemalas		70	@ 80
Manila		70	@ 75
Madras		65	@ 85
Indigotine		3 00	@ 4 00
Lac dye		9	@ 15
Logwood stick	℔ ton	36 00	@40 00
Madder, Dutch	℔	7½@	8
French		5	@ 7
Myrobalans		2	@ 2¾
Muriate of tin		10	@ 15
Nitrate of iron, commercial		2	@ 3
true		5	@ 6
Nutgalls, blue Aleppo		15½@	16½
Chinese		16	@ 17
Oxymuriate of antimony		4	@ 6
Persian berries		—	@ 17
Prussiate of potash, Am. yellow		18	@ 19
red		42	@ 45
Scotch yel		19	@ 20
red		42	@ 45
German yel		19	@ —
red		42	@ 45
Prussiate of soda		17½@	18
Phosphate of soda		7	@ 8
Safflower		—	@ —
Sago flour		3½@	3¾
Salts of tartar		6½@	7
Soluble oil		—	@ 6
Sumac, Sicily prime	℔ ton	65 00	@70 00
Virginia		45 00	@50 00
Starch, corn	℔	2¾@	3
potato		4½@	4½
wheat		5¾@	6¼
Stannate of soda, 40% soluble		—	@ 15
Stannate of soda, 40% soluble		—	@ 12
25% soluble		—	@ 9
20% soluble		—	@ 8
Tin crystals		18½@	20
Turmeric root, Alleppy		3	@ 3½
Bengal		—	@ —
Corringa		3	@ 3¼
powdered		5	@ 6
Ultramarine, imported		29	@ 30
American		5	@ 16
Vanadiate, ammonium		90	@1 00
Wood, English		9	@ 10
Coal Tar Colors:			
Alizarine		19	@ 20
Aniline oil		20	@ 25
salt, crystals		18	@ 18
cake		20	@ 21
Bismarck brown		90	@1 20
Rosine		3 40	@ 3 60
Fast red		50	@ 65
Fast yellow—acid		75	@1 50
Fuchsine crystals		1 25	@ 1 75
Hoffman's violet—3B		1 75	@ 2 50
Methylene blues		4 50	@ 6 75
Methyl violets—2R		1 50	@ 2 00
2B		1 50	@ 2 00
B		1 50	@ 2 00
Nicholson (alkali) blue—3B		2 25	@ 3 00
5B		3 75	@ 4 00
Red shade		2 00	@ 2 25
Nigrosine		1 35	@ 2 00
Orange A—II		40	@ 85
Safranine		1 75	@ 2 25
Scarlet R		45	@ 55
RR		50	@ 65
RRR		70	@ 75
Soluble blue—green shade		2 00	@ 3 50

These prices are for colors of standard purity in original packages. Reduced colors can be obtained at irregular and very much reduced figures.

Chipped Dyewoods, Etc.:			
Barwood	℔	1¾@	2¼
Camwood		4½@	8
Fustic, com		1½@	1½
Cuban		1½@	1½
Green ebony		3½@	4
Hypernic		3½@	4½
Logwood, Campeachy		2 @	2½
Laguna		2 @	2½
Nicwood		2 @	3
Peachwood		3½@	3½
Quercitron		1½@	—
Redwood		2 @	3
Red sanders		— @	3
Extracts:			
Archil	℔	18 @	20
concentrated		21 @	25
Black oak		23½ @	28¼
Barberry, French		28 @	30
Chestnut		5½@	—
Chestnut oak		3½@	—
Ref'd sedimentless hemlock		4½@	6
Prime hemlock		3½@	4
Fustic, solid		10½@	—
liquid, 51 deg		8 @	—
Indigo extract		7½@	—
Logwood, solid		10 @	10½
liquid, 51 deg		6½@	6¾
42 deg		5½@	5¾
Persian berries, French		— @	—

COMPARATIVE PRICES.

	1887.	1886.	1885.
Chemicals.			
Bleaching powder	1 87½	1 95	1 55
Caustic soda, 70%	2 30	2 45	2 50
Caustic soda, 60%	2 52½	2 60	2 75
Sal soda	1 00	95	90
Soda ash, 48% carb	1 22½	1 25	1 30
Soda ash, 48% caustic	1 20	1 25	1 30
Soda ash, 48-58% N. C	1 05	1 15	1 30
Soda alkali, 58% B. M	1 20	1 20	1 35
Soda nitrate	2 07½	2 00	2 40
Brimstone	$20 00	$20 25	$22 50
Cream tartar	33¾	34¼	34¼
Muriate of potash	1 72½	1 67½	1 70
Chlorate of potash	15	16¾	19½
Kainit	8 00	7 25	7 50
Paints.			
White lead in oil	6½	7	6½
Litharge	6	5¾	5¾
Paris green	—	16	15
Orange mineral	8	7¾	8¼
Ven. red, English	1 40	1 40	1 40
Ven. red, American	1 00	1 00	1 00
Barytes	$16 00	$16 00	$18 00
Whiting, Commercial	45	37½	40
Drugs.			
Opium	$3 87½	$3 20	$3 45
Morphine, domestic	2 85	2 10	2 15
Quinine, German	50	52	65
Quinine, domestic	49	50	78
Cinchonidia, domestic	5	8	14
Alcohol	2 00	2 17	2 10
Borax, city	8	6	7¾
Beans, tonka (Ang)	1 35	1 55	1 50
Cubebs	1 35	1 25	85
Cuttlefish	17½	11½	13½
Glycerine, American	19½	19½	15½
Oil, castor, city cs.	14	17	17
Oil, codliver, Nor	27 00	24 00	30 00
Quicksilver	68	51½	43
Oil, bergamot	2 37½	1 70	1 60
Oil, casia	67½	60	80
Oil, cubebs	12 00	7 50	8 00
Oil, lemon	1 45	1 00	1 65
Oil, peppermint, tins	2 00	2 50	3 55
Oil, sassafras	45	35	30
Aloes, cape	5¾	7	7
Asafœtida	9	11½	11½
Gum arabic, 1st picked	92½	92½	75
Gum aribic, sorts	50	57½	40
Camphor	24	23	23
Shellac, D C	25	18	20
Senna, Alex. Nat	32	32½	15
Gentian root	4¼	4¼	4¼
Ipecac	1 25	82½	82½
Canary seed, Smyrna	2¾	3	2½
Caraway seed, Dutch	7	8	10½
Coriander, English	4	4¾	5¾
Hempseed	2¾	2½	3
Mustardseed, Cal. yel	4¼	5	5½
Mustards'd, Trieste, br	7	5½	7½
Rapeseed, English	4	4½	3½
Rapeseed, German	3¼	4	5¾
Oils.			
Linseed, domestic	53	42	44
Cottonseed, prime S Y	41	37½	32
Olive, Sicily	66	75	81
Palm, prime	4¾	5½	6
Cocoanut, Ceylon	5¾	6¾	5¾
Lard, prime city	64	52	51½
Menhaden, prime cdc	23	21	24½
Whale, bleached win'r	41	39	48½
Sperm, bleached win'r	70	78	95
Paraffine, 25 gravity	9½	8½	10¾
Neutral, 34 gr. b'less	15	16	15
Black, 29 gr. 15°	7½	8	9
Cylinder, 600°	15	15	18
Oil cake, western	24 50	24 00	30 50
Spirits turpentine	37¾	36	34
Dyestuffs.			
Cochineal, Teneriffe S.	30	30	38
Cutch	7½	7½	6¾
Gambier	5½	4¾	5
Indigo, Bengal h grade	1 25	1 45	1 50
Bichromate potash	10¾	9¼	9¾
Prussiate potash, yel	19	19	21
Sumac, Sicily prime	68 00	72 00	85 00
Starch, west'n corn bbl	2¾	2¾	2¾

THOMS & CO.

Manufacturers of

ROCK CANDY, ROCK CANDY SYRUP,

COLORING ETC.

613 S. Broadway, Baltimore, Md,

ALL GOODS GUARANTEED.

PURE ALKALI.

Manufactured by the Ammonia Process

BY

BRUNNER, MOND & CO.

LIMITED.

NORTHWICH ENGLAND.

TRADE B.M&C.O MARK.

TRADE B.M&C.O MARK.

THIS ALKALI contains 58[50] deg. Alkametrical Test and is the most **Economical form of Soda** known for the manufacture of **Glass, Soap, Paper, Wood Pulp, Starch or Colors.** And for **Cleaning Wool and Bleaching.** In fact, for any purpose where **Soda in its purest form** is required.

Its strength is uniform, and quality always the same.

The following is the Chemical Analysis of this Alkali:

Carbonate of Soda,	98.72 per cent.
Sulphate of Soda,	0.20 "
Chloride of Sodium,	0.54 "
Carbonate of Lime,	0.13 "
Carbonate of Magnesia,	0.04 "
Peroxide of Iron,	0.01 "
Alumina	0.01 "
Silica,	0.09 "
Moisture,	0.26 "
Total,	100.00

We are in constant receipt of **BRUNNER, MOND & CO.'S** manufacture at **New York, Boston, Baltimore and New Orleans.**

We have appointed as Exclusive Sales Agent for their district,

LINDER & MEYER, Boston, for New England States.

We are prepared to make forward contracts for delivery monthly.

WING & EVANS,

54 WILLIAM STREET, NEW YORK.

SOLE AGENTS FOR THE UNITED STATES.

Herf & Frerichs Chemical Co

Manufacturing Chemists,

St. Louis, Mo.

MANUFACTURERS OF

Brom. Ammonium,	Mur. Ammonia gran. pure,	Caustic Soda, Sticks,
C. P. Acids,	Chlorate Potash, "	Caustic Potash, "
Cyanide Potassium,	Conc. Nitrous Ether,	Peroxide Hydrogen,
Subnitrate Bismuth,	Iodide Potash,	Iodoform, Powdered,

HYDROCHINON,

Sulphuric Ethers.	All Scale Salts,	Carbolic Acid Cryst.
Carb. Precip. Iron,	Chloride Gold,	Nitrate Silver,
Brom. Potassium,	Oxalate Potash,	Salicylate Soda,
Bromide Sodium,	Sulphite Soda,	Sulphate Zinc, Cryst.

AND A GENERAL ASSORTMENT OF

Pharmaceutical. Photographic & Technical Chemicals.

EASTERN AGENTS

Schoellkopf, Hartford & Maclagan, Limited.

3 Cedar St., NEW YORK. 103 Milk St., BOSTON.

HOLLINGSWORTH & PETERSON,

Brokers in Chemicals, 49 North Front St., Philadelphia

Representing WING & EVANS, of New York, for the sale of

PURE ALKALI, 48 & 58 per cent.

MANUFACTURED BY

BRUNNER MOND & CO., England. SOLVAY PROCESS CO. Syracuse N. Y.

Jarrow Chemical Company,

NEWCASTLE ON TYNE.

Bleaching Powder, Caustic Soda, Sal Soda

Carb Soda Crystals, Soda Ash, all tests, Bi-Carb Soda.

Edward Hill's Son & Co., Agents,

25 & 27 CEDAR STREET, NEW YORK.

WING & EVANS

Commission Merchants,

54 WILLIAM STREET, NEW YORK.

Soda Ash, Sal Soda, Caustic Soda, Bleaching Powders

AGENTS FOR

BRUNNER, MOND & CO.

SOLVAY PROCESS CO.

C. ALLHUSEN & SON.

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COMMISSION MERCHANTS,

72 PINE STREET, NEW YORK.

IMPORTERS OF

Soda Ash, Caustic Soda, Sal Soda, Bleaching Powder, Salt Cake, Oxide Manganese, Chloride Manganese, Potash Alum, Sulphate Morphia, Carbonate Potash, Hyposulphite of Soda.

SOLE AGENTS IN THE UNITED STATES FOR

Charles Tennant & Co.,

Edward Hill's Son & Co.,

25 and 27 Cedar St., New York.

Caustic Soda,	Caustic Potash,	Cocoanut Oil, Ceylon.
Bleaching Powder,	Carbonate Potash,	Cocoanut Oil, Cochin.
Soda Ash,	Chlorate Potash,	Palm Oil,
Carbonated Crystals,	ARSENIC.	Citronella, Fisher's Brand
Sal Soda,		Cookson's Ven. Red,
Bicarb Soda,		Orange Mineral,

Blundell, Spence & Co.'s Paints and Colors.

Fratelli De Pasquale & Co.'s

ESSENTIAL OILS,

LEMON, BERGAMOT AND ORANGE, GUARANTEED PURE.

PURE ALKALI.

Manufactured by the Ammonia Process.

This Alkali contains 58 per cent. of Alkali or nearly 99 per cent. of Carbonate of Soda. It is the most economical form of Soda for Manufacturers of Soap, Glass, Paper, Wood Pulp and Colors, and for Printers and Bleachers.

CRESCENT BRAND TRADE B.M.&Co. MARK.

MANUFACTURED BY

BRUNNER, MOND & CO.,

LIMITED,

NORTHWICH, ENGLAND.

AND

SOLVAY PROCESS CO.,

SYRACUSE, NEW YORK.

CRESCENT BRAND TRADE B.M.&Co. MARK.

TRADE MARK

THE SOLVAY PROCESS CO. will make by this same process an Alkali adapted for Window Glass Makers testing 48 per cent.

WING & EVANS, 54 WILLIAM STREET, NEW YORK, Sole Agents for the United States.

WING & EVANS have appointed as exclusive Sale agents,

Messrs. LINDER & MEYER, BOSTON, for New England States who are prepared to contract for future delivery

CHEMICAL MARKET.

Note—*Our prices are for large lots except when otherwise specified, and buyers of small quantities must expect to pay an advance on these figures.*

The prices current will be found on page 50.

TUESDAY EVENING, Dec. 25, 1888.

Heavy Chemicals.

Another dull week is reported in the market for heavy chemicals. Nevertheless, influenced by the very strong reports from the other side, a firm feeling pervades the market, bleaching powder and caustic soda alone showing signs of weakness. In the case of both the latter, however, the easy feeling is said to be only temporary and will probably disappear after the turn of the year. Owing to the holiday we go to press without our usual weekly letter from Liverpool, but according to advices from other sources there has been no marked change there since the previous report.

Carbonated soda ash, 48%, is still hardening in price under the stimulus of advices from the primary sources of supply. There is, however, little interest manifested by buyers, in the future of the market, and we have heard of the placing of no important contracts since the date of last writing. A moderate demand for immediate and early delivery is noted, but small lots only are wanted to carry the trade along until after January 1st. We quote 1 22½@1 27½c as to brand, quantity and position in a large way, and 1 32½@1 37½c for small lots from store.

Caustic soda ash is quoted at 1 25@1 27½c for ordinary brands of 48%, but some favorite makes are held as high as 1 30c in a large way. There is no pressure to sell for forward delivery, while on the other hand buyers here are not at all anxious to enter into long contracts. In a jobbing way on the spot there is a moderate demand, the trade being supplied at 1 30@1 35c, as to quantity and seller.

Refined alkali 48% cannot be bought below 1 22½c in a large way and for 58% 1 15c is quoted as bottom, while in car load lots or less 1 25@1 30c for the former and 1 17½@1 20c for the latter is demanded. Manufacturers are sold far ahead, but at present they appear to be booking few fresh orders.

Caustic soda is rather easy, owing to the offerings of resales by speculative holders, who have contracts at comparatively low prices, extending to the end of the year. Such stock is procurable at 2 45@2 50c for 60%, and 2 27½@2 30c for 70@74%, according to quantity. Manufacturers are not forcing business, and are not particularly anxious to entertain contracts for next year's delivery. The market is now very quiet, but after the turn of the year an improved demand and higher prices are expected, particularly as the manufacturers' association has ordered a further restriction of 25% of the production, to take effect early in January.

Sal soda is quiet but very firm. On the spot, 95@1c are the quotations, according to quantity and seller, while for future delivery 90@95c is asked.

Bleaching powder remains very quiet, and prices still favor the buyer, owing to rather large accumulations of stocks in the hands of speculative dealers, who are anxious to realize. In a small way, on the spot, 2@2½c is paid, but for arrival 1 87½@1 95c, as to brand and quantity, will be accepted. There is no disposition on the part of buyers to do business, the current trading being of the hand to mouth order.

Acids.

Acetic acid, owing to the absence of any demand, must be written somewhat weaker, and prices show a reduction from last week, now being quoted at 2@2¼c.

Nitric and muriatic acids have ruled quiet and are unchanged. Small sales are reported, but the same have attracted no attention. Former figures are ruling.

Oxalic acid has been steady throughout the week with small lots moving exclusively, while the market has continued to be quoted at 8½c for ten-ton lots, and 9c per pound by the single cask. This is for prime German and English makes, ex dock or store, New York, Philadelphia and Boston. Terms net cash.

Sulphuric acid cannot be said to have changed materially since we last wrote. Manufacturers are still engaged in filling existing contracts, but no new business of any moment can be mentioned. Quotations continue at 90@95c for 60° and 95c@$1 25 for 66°.

Tartaric acid—Prices have undergone a reduction of two cents, being now quoted at 41c for crystals in quantities of 3,000 lbs. or more; in barrels, less quantity, 42c; in 50-lb boxes, 43c. For powdered a cent advance is asked over these figures. The demand has been for small parcels entirely, no large movement being reported.

Miscellaneous.

Acetate of Lime—No important features have come to light since our last writing, the market ruling unchanged with trading rather light at 2@2 10c for gray and 1@1 05c for brown.

Blue vitriol has sold in a small way, but we can learn of no business of an important nature. For limited quantities, quotations are ruling at 5 70c, while for large lots probably 5½c would buy. These prices are, of course, for a first-class article, inferior grades having been offered on the market at lower figures.

Brimstone is quoted at $19 50 for best unmixed seconds, January shipment, and we are informed of sales of 1,000 tons at these prices. The market would appear to be easier in tone, and beyond the above we get no business, Thirds for the same shipment are quoted at $19. On spot, nothing of any moment has been accomplished, while quotations are stationary at previous figures.

Nitrate of soda—Small sales have consummated since we last wrote, but no long transactions can be noted. The market continues firm, with prices ruling at 2 37½@2 40c for supplies on spot.

Cream Tartar—A quiet market has prevailed since our last, and very little has been accomplished in the way of trading. Quotations are unchanged at 31@31¾c for crystals, and 31¾@32½c for powdered, as to style of package and quantity. Terms, net cash, 30 days, f o b New York, or less 1% for prompt cash.

Ammonias, Potashes and Fertilizing Chemicals.

The market for fertilizing chemicals, in common with business generally, has not been specially active during the week under review. Prices have continued to be maintained however, being quoted as follows: Azotine at $2 55@2 65, as to quality; dried blood $2 50@2 55 for low grade Eastern in buyers' bags and $2 65@2 67½ for high grade Western finely ground; tankage, $25@26 for high grade, and $22@23 for medium and low grades, as to quality; sulphate ammonia, $3 35@3 45; boneblack guaranteed 70% phosphate, $19 50@19 75 per ton; dissolved bone, 95c@$1 per unit; acid phosphate, 80c per unit: rough bones, $21 per ton for hard and clean foreign, and $18 for the usual run of domestics; ground bone, $25@30 as to grade; fish scrap, $24@25 f o b factory. Undried Charleston rock is held at $5 per ton, and kiln dried at $6, both f o b vessel, at the mines. Ground Charleston rock is now quotable at $10@10 50 ex steamer at New York.

We are indebted to Messrs. Thos. H. White & Co. for the following, dated Baltimore, Dec. 17, 1888: "We note a fairly active market a full prices. Comparing the situation with last season, we find that in October, 1887, there was on hand in packing centers in the West the largest stocks of tankage and blood known in eight or ten years. Prices for blood in October touched $1 77½ per unit delivered. Baltimore or $1 50 f o b Chicago, and standard 9 and 20 tankage sold early in January, 1888, at $16 50 Baltimore, or $12 00 f o b Chicago. Under the large demand for the South, prices improved during the winter, and all the current production and the surplus stocks were consumed. We entered the spring months with expectations of renewal of supplies from the summer slaughtering and the fish catch, but were disappointed, as the latter for the past season was the smallest in many years, and the summer packing also fell off 500,000 hogs, equal to 2,000 tons of blood and tankage. The demand for material during the summer kept pace with, we may say ahead, of supplies, and prices advanced in the eight months from February to October from $1 80 per unit to $2 37½ for blood, and from $14 per ton f o b Chicago to $20 for tankage of standard 9 and 20 grade, and for 7 and 30 from $13@18 50. We began the winter season without any accumulation at packing centers and with the winter product closely sold up at current prices. Producers who have not contracted ahead are only those like Armour, who have ample facilities for storage and who are not afraid to carry a little stock. The question of a decline or a further advance depends on their disposition to push their product as made, or to hold firmly. The hog killing for November was 510,000 hogs less than 1887, and the indications are that it will continue to be very much less this winter than ast.

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58
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Magnesia,	traces
Peroxide of Iron,	0.06 "
Alumina,	0.03 "
Silica,	0.08 "
Moisture,	0.10 "
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AGENTS FOR THE UNITED STATES.

In face of this fact we do not anticipate any weakening just yet on the part of the packers. For the moment, with the approach of the new year, there is a lull in the demand, and we hear from many sources that buyers are waiting, expecting lower prices for ammoniates."

Muriate of Potash—Dealers state that a greater quantity has been contracted for for next season's supply than ever before, but decline to give the actual amount. The contract price is now $1 80. For spot supplies no items of interest can be mentioned, while the market is ruling at our former prices, viz., $1 82½@1 85.

Double manure salts show no change. Trading has continued light, with values quoted at 2@1 25c basis of 48@50% potash.

Sulphate of Potash—Has ruled firm, and prices are now in the neighborhood of $2 40@2 50 per 100 pounds, basis of 90% potash. No particular business has been accomplished.

Kainit remains very firm in price in view of the fact that shipments after this month will have to be suspended for some months on account of the lack of freightroom at ports of shipment. December shipment is offered very sparingly, but no change has been made in the price, which remains at $9 75 for cargoes. There is very little spot kainit for sale, and we quote nally, $10 50@11.

The Kainit Syndicate.

The *Chemiker Zeitung* says: As we have already informed our readers a syndicate has been formed to govern the supply of kainit after long continued negotiations between the interested firms in Berlin. The arrangement continues in force for ten years. Accounts appeared in the daily papers immediately after the formation of the syndicate, giving accounts of the arrangements made, some of which partially misrepresent the facts. We are in the position to give the following accurate statistics as to the supply both of carnalite and kainit, those relating to carnalite having been previously published.

	Carnallite.			Kainit.	
	For Manufacturing Purposes. Per cent.	Agriculture, Bath Salts, &c. Per ct.	Crude for Agriculture. Per cent.	Working up for Conc. Salts. Cwt.	
Royal Prussian Works, Stassfurt	18	13-15	20	18·125	1,300
Neuhagi, Anh. Salt works, Leopoldshall	18	13-15	20	18·125	1,300
Consol. Alkali Works, Westeregeln	14	8-15	10	15·0	800
Neustassfurt Mining Co., Loderburg	14	8-15	30	18·125	1,800
Potash Works, Ascherleben Mining Co	14	8-15	5	18·125	*2,000
Ludwig II. Mining Co., Stassfurt	10	12-15	10	....	....
Vienenburg Potash Works, Vienenburg	7	13-15	5	12·500	...

*Or 2,800 cwts. Schoenite.

The normal demand for kainit is therefore calculated at 7,200 cwts. per diem. If this be decreased, the division is effected by only diminishing the production of the Consol. Alkali Works, Westeregeln, after that of each of the first two mentioned works has been lowered by 800 cwts. A rise in the daily demand is met by raising the production of the two Government works and of the Consol. Alkali Works until it has reached 1,800 cwts. a day, a further rise being then equally divided with Neustassfurt. The amount required above 10,000 cwts. a day is shared equally among all five works.

A New Lacquer for Iron and Steel.

After many experiments, a preparation consisting of a modification of the well-known Japanese gum lacquer has been adopted for the Imperial Japanese Navy. There is a certain difference between the compound prepared for painting iron and steel and the ordinary lacquer for wood, but the principal element is still the gum lacquer. The difficulty hitherto has been to prevent the material becoming very hard and then cracking, but this is now said to have been surmounted. It is claimed that a ship protected with this lacquer can keep afloat for three years with only the one instead of six dry-dockings. A ship of the Russian Pacific squadron has tried the new coating, and with very satisfactory results. It is now believed that a tolerably perfect anti-corrosive coating for iron and steel structures has been discovered which may render substantial service in the preservation of all descriptions of erections in iron and steel. The first cost of the preparation is rather high, but it is claimed that the excess of cost is more than compensated for by the amount of protection obtained. The chief doubt that exists as to the future of the preparation is that the supply of gum lacquer will be unequal to the demand.—*Kuhlow's Review.*

Soap Works in Bristol.

The soap industry of Bristol, says the *Oil and Colorman's Journal*, provides employment for a large number of men, and the processes of manufacture are very interesting. In the first or "kill" process animal fat is melted down and changed into stearic acid; in the second or "make" soda is added, forming glycerine and stearate of soda, which is soap; salt is then thrown in, and by it the glycerine is separated from the soap and led off in the lees. In the third or "fit" process the soap is further purified, and finally run off into moulds. When cool the solid blocks are cut into slabs, and then into bars, in which condition it is sent away. Not only soap, but candles, paraffin and composite are made at these works—the former being made from refined paraffin, the latter from palm oil. The paraffin is purified by being subjected to a pressure of 130 tons, when the impurities are squeezed out. It is a remarkable fact that the three hydraulic presses which do this work, were originally used to compress the hay sent out to our troops during the Crimean war. The machinery which performs the various operations during the manufacture of the soap and candles is of a most perfect description. Some of Mr. Thomas's devices were also seen at work, notably one for breaking up foam over the coppers, an interesting example of the conveyance of power under difficulties. There are numerous hydraulic lifts, pumps and engines, each doing its special duty. A beam engine was seen at work, which had originally been used to drive the machinery at the works where the Great Western was built—which ship was the first steamer to cross the Atlantic from England to America, arriving at New York from Bristol in 1838. A large number of boilers are needed to supply steam for all these engines—one range was particularly interesting, as the coal was distributed by means of an archimedian screw to hoppers, and thence by Bennis' mechanical strokers on to the furnace fires. These strokers do away with hand power, and, on account of their special construction, effect a considerable saving in the coal bill; and, as no clinkers are produced, a great deal of labor is dispensed with.

Adulteration of Soft Soap.

One hundred parts of fatty matter combined with soda or potash yield 230 to 235 parts of pure soft soap, containing 33·14 per cent. of water. When certain adulterants are added, in quantities too small to affect the appearance of the soap, 100 parts of grease will yield 320 to 340 parts of what would be a good commercial article, containing 33 to 38 per cent. of water. The same quantity of grease can be made to produce 380 parts of soap, containing as much as 52 per cent. of water. The adulterants generally used are clay, rosin, fecula, and silicate of soda. All are added to increase the yield of

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Muriate of Iron,	Glauber Salt,	Blue Vitriol,	Prussian Blue,
Canary Yellow,	Etc.,	Sulphate of Zinc,	Etc.

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Assignees of Mr. Wetherill Peterson's "CRESCENT CHEMICAL WORKS," are now prepared to furnish Copperas in any quantity to the trade. Address PHILADELPHIA COPPERAS WORKS, Lock Box 1136, Philada, P

soap and the proportion of water it can contain. Clay is the most harmless of these adulterants. It is partly dissolved by the alkali, but makes the soap opaque, and is easily detected by its insolubility in water. It increases the amount of water required to bring the soap to the proper consistence, but is not otherwise harmful. It is less and less employed every day. Rosin combines with alkali, but the resulting compound "possesses none of the emollient qualities of fats." It retains large quantities of water, but alters the emollient and detergent power of the soap, and makes it more caustic and corrosive. Soaps adulterated with rosin only are clear, brilliant, and transparent; more soluble in water than pure soap. They nearly always retain a slight odor of rosin which is most noticeable when the soap is warmed. Their color is often redder than usual. They attack the skin, and make linen yellow. Fecula is very harmful, especially when combined with silicate of soda. It is generally employed with three or four times its weight of lye, water, or silicate of soda. Soap made with it contains an excess of alkali, and a very large quantity of water. It is more or less opaque, as the proportion of starch is large or small; it is easily soluble in water; it is much affected by changes of temperature; and its detergent power is much lessened by the large proportion of water it contains. The latter fault is partly concealed by making it excessively alkaline; it is then corrosive, and attacks and destroys the skin, coloring matters, and woollen and silken goods. Analysis reveals the presence of the decomposition products of the latter in the water in which they have been washed. Silicate of soda with fecula is far the most injurious adulterant of soap, and it is also the one most usually employed. Almost all commercial soaps contain it. Silicate of soda in small quantity does not alter the appearance of the soap; but it is decomposed when used, and silicate is deposited in the fiber of the flax or cotton, and cannot be removed, rapidly destroying the tissues. Silk and wool are also attacked, and made more liable to be destroyed by alkalies. Water in which silk and wool have been washed with this soap contains considerable quantities of sulphur and ammonia resulting from the decomposition of the material. According to Dr. Vohl, linen and cotton cloths thus treated look, under the microscope, like worn fabrics —the fibers destroyed and the surface covered with a nap. Franklin said good bargains are sometimes ruinous. This is particularly true of soaps. Low-priced samples are never cheap; a larger quantity must be used to cleanse an equal amount, and fabrics are far more rapidly destroyed.

The Treatment of Ammoniacal Liquor.

The treatment of that by-product of tar distillation, ammoniacal liquor, has always involved many practical difficulties, which have been enhanced by the provisions of the alkali act prohibiting the escape into the atmosphere of gaseous combinations offensive to the public. At the Wear Patent Fuel Works, Sunderland, various minor improvements have been made in the mode of treating the ammoniacal liquor for the purpose of extracting sulphate of ammonia, and since the beginning of last March a new method of dealing with the waste gases has been introduced.

Prior to the date above mentioned, the "column" system was in vogue at the Wear Patent Fuel Works, and the plant is still retained, being made use of when the plant for the improved process is being repaired. The first process through which the ammoniacal liquor passes is that of being boiled. This is effected in the "stripper," which is an egg-ended cylindrical boiler, 25 feet long and 6 feet in diameter, elevated above the ground, to allow the necessary connections of pipes to be made for carrying off the sedimental refuse to the drains. The boiling process is carried out by means of steam of 60 lb. per square inch pressure, which is passed into the stripper through a system of 2 in. copper pipes from the main boilers. The portions of the pipes inside the stripper are perforated, so that the steam comes into actual contact and mixes with the ammoniacal liquor. As soon as the latter has been raised to boiling point, the supply of steam through the perforated tubes is cut off and the boiling is continued by means of steam passing through a coil of pipes which is also located inside the stripper. The vapors from the ammoniacal liquor, which commence to evolve at a temperature of about 190° F., passes out of stripper through metal pipes to the saturators situated in an adjoining building, where they are neutralized in the ordinary manner by means of sulphuric acid. As soon as the process of neutralization is completed the fluid is passed into the settlers, situated conveniently below the saturators; the settlers being in connection with the saturator, while the remaining settlers and the saturator form an independent arrangement. In case of need, however, both sets of saturators and settlers can be used for either the old or the improved process. After the settling process is completed, which usually takes about an hour, the clear liquor is passed into the evaporators, which are of the ordinary type, having in close conjunction drainers on which the sulphate of ammonia deposited in the evaporators is afterward placed. Returning to the stripping process, the lime is introduced into the boiling ammoniacal liquor, as in the ordinary column process, in order to free the fixed ammonia, and one of the advantages of this improved method is that it facilitates the liming process, which is effected by injecting the lime by water pressure into the top of the stripper. Besides other minor advantages as compared with the column system, Mr. Dixon's improved arrangement obviates the necessity of heating the ammoniacal liquor prior to introducing it into the stripper. There is also a considerable saving of time, as the entire operation of treating 3,000 gallons of ammoniacal liquor is effected in the new plant in from eight to eighteen hours, according to the strength of the liquor, while in the old system ten to twenty hours were occupied in completing the process.

The disposal of the waste gasses is also carried out by an improved method. The sulphureted hydrogen which accumulates in the saturators passes through suitable pipes to the condensers. Previously these gases were discharged underneath the gates of the furnaces of the main boilers. This practice, however, had to be abandoned under the provisions of the alkali act. The gases are now conducted into the which are two flat-ended cylinders 12 feet high and 3 feet in diameter. They are connected together by a cast iron pipe, 8 in. in diameter, and placed at an angle so as to connect the bottom of the condenser, to the top of the condenser. The gasers enter, and are therein partially condensed by the atmosphere and by a spray of water. After passing through the condenser, all the moisture in the gases is removed. The gases then pass through a 6 in. pipe into one of the two purifiers. Each of the condensers is provided with traps formed of 2 in. pipes for passing the retained moisture and the water used in condensing to the sewers. The purifers are built of bricks, and are seven feet square and 6 feet deep. Some distance above them is erected a substantial shed roof, to protect the oxide of iron with which the purifiers are filled from the weather. As already indicated, the gases from the condenders pass into the bottom of one of the purifiers, although two are provided, so that in case one becomes fully charged, the other is available while the sulphureted oxide of iron is removed and the purifier recharged.—*Industries.*

Salt Wells in Kentucky.

A correspondent writing from Louisville, to the *Manufacturers' Record*, says:

Scarcely less important than Professor Orten's approval of the gas territory is his recommendation of the salt wells in the vicinity as offering an extraordinarily cheap opportunity for the manufacture of salt. Since 1872 salt manufacture has been going on continuously at the first well discovered, and the present rate of production is about 7,500 barrels per annum. "I am somewhat familiar," writes Professor Orton, "with the conditions of salt production in the country at large, and I think I cannot be mistaken in claiming that the Moreman Works are, by all odds, the most profitable salt works in the country on the basis of the investment and the cost of manufacture at the present time." The experience which the drillers have had in boring for gas in Meade county has enabled them to avoid salt water or to reach it with something like precision, and there seems no reason to doubt that the extraordinary flow of salt water from wells that could be made to furnish the

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basis for an extremely large salt industry, and the gas from the salt wells could be utilized for the purpose of keeping the water boiling. At the Moreman well, where salt has been made for years, the fire under the boilers was not extinguished during thirteen years, and all that time the water and the gas flowed uninterruptedly. The only expense required was the dipping of the salt every morning for barreling.

Chrome Alum as a Substitute for Bichrome.

The action of bichrome in wool dyeing is well known. Wool is heated with bichrome, argol and a small quantity of sulphuric acid. The chrome acid is reduced by the tartaric acid, and chrome oxide is formed. The tartaric acid, therefore, acts merely as a reducer, and this action may be obtained in another manner at a much lower cost; but the substances which have been tried do not answer the end in view, if the formation of chrome salts is considered necessary, because they do not exert a reductive action upon the chromic acid—at least the residues of the manufacture of muriatic and nitric acid, which have been chiefly used for this purpose. If we consider the great differences between the proportions of chromate of potash, tartaric acid, and sulphuric acid employed by dyers, we shall easily understand that the reactions are not always simple; thus, for instance, undecomposed chromate will influence the formation of the color. This circumstance, in addition to the fact that the production of a salt of chrome in a very dilute solution takes place only little by little, and in an irregular manner, explains the deficiences hitherto experienced in dyeing with bichromate of potash.

It is further known that chromic acid is strongly sensitive to the action of light. If a woollen tissue is saturated with bichromate of potash, and if certain parts are exposed to the light, these parts will be marked on subsequently dyeing, and the piece will be uneven. Upon this property are based the photographic processes for printing with fat inks. This inconvenience makes itself sometimes felt very strongly; if there has been neglect in protecting the wool, yarns, or pieces from the direct action of the sun or of daylight, the goods will present most astonishing shades.

All these inconveniences disappear on using chrome alum; the oxide of chrome no longer requires first to be formed, and light no longer acts in an injurious manner, since there is no chromic acid, and chromic oxide is completely insensible to light. The tartaric acid, the use of which is so costly, is done away with, and it is sufficient to add a small quantity of sulphuric acid, and occasionally also of alum and blue stone.

Chrome alum, which is to be met with in trade in crystals of variable size, is a deep reddish violet, and dissolves easily in boiling water. It costs about half the price of bichromate, and in addition the cost of argol is saved. Chrome alum gives in water a green solution, darker or lighter according to the degree of concentration, and the color of the liquid is not much influenced by the presence of sulphuric acid, blue stone, &c.

The wool is boiled for one and a half hour in a mordanting beck, turning it frequently; it takes at first a light green color, which is gradually transformed to a bluish green; this color does not change like that obtained on wools with chromate or potash, which is green at first, but becomes a pale yellow on exposure to the air.

The author has produced with chrome-alum nearly all the chrome colors in demand, especially black, blue, violet, light and dark greens, olive and brown in all imaginable shades. He finds that sulphuric acid, if used at all in a large proportion, is injurious rather than useful in dyeing with chrome alum. For 22 lbs of wool, 8¼ ozs of chrome alum are sufficient, boiling for ninety minutes, lifting and dyeing for about two hours in a logwood beck.

Sulphuric acid is more useful for dyeing blues and greens, but always in combination with alum. The addition of blue stone yields deeper tones, and chloride of tin changes the blue to a violet, and gives the greens a bluish cast. For brown sulphuric acid may also be used, but only when no madder is employed.—*English Ex.*

New Process for Obtaining Ammonium Chloride from Nitrogen of Cinders, and Organic Matter Generally.*

BY ANDREW FRENCH.

The method of producing chloride of ammonium which I have the privilege to describe to-night was a discovery made some time ago when directing the erection of some new plant at a lead smelting works on Tyne side.

It happened at the time that a large quantity of furnace ashes (containing a considerable proportion of half burned coal) which had been tipped into a piece of hollow ground intended to be used as a storage place for bar lead, caught fire, and as the ashes threatened to burn back under some large piles of lead, it became necessary to extinguish them.

The handiest way to do this was to turn on some waste water which flowed in a constant stream from the fume condenser; this was accordingly done and in a few weeks the fire was overcome.

Now if it had not been for two accidental circumstances this ash-heap fire, like all conflagrations of its kind, would have been a most uninteresting and commonplace affair. The two conditions which made it noteworthy were these: Firstly, the cinders before being taken to the tip were usually drenched with salt water from the Tyne, and so were soaked with a solution of common salt. Secondly, the water from the condenser, which was also salt, contained sulphurous acid to the point of saturation; and the interesting result of this in the burning heap was the development of a very large quantity of chloride of ammonium.

It is no exaggeration to say that the surface of the heap was for the greater part covered with white sparkling sal ammoniac, as if with snow, and at one time a ton at least of that salt might have been collected. In some places there were large cakes of it from an inch to an inch and a half thick.

Prof. Dittmar happened at that time to pay a visit to Newcastle, and I had the pleasure of showing him the heap while it was still well coated with the ammonium salt, and to him I must express my indebtedness for valuable advice in following up the investigations to discover the rationale of the phenomenon. I shared at the time, along with a great many others, the hope that a good way to make ammonia from the nitrogen of the air would some time or other be discovered, and thought that possibly this was it; but Prof. Dittmar warned me to get that idea off my mind and at once search for the source of the ammonia in the residual nitrogen of the half burned coal. Following his advice, I took a fair sample of similar ashes drenched with salt water and burned these in a Cornish assay furnace with a supply of steam, sulphurous acid and air (the air in limited supply). I obtained in that way a profuse production of ammonium chloride. I varied this experiment in a number of ways, and found that when air, steam, sulphurous acid (or sulphur yielding compound), and common salt were present, chloride of ammonium was always formed, but if the steam, or the sulphur, or the salt was left out, none was formed.

My next step was to examine the heap thoroughly. I let a glass tube down into one of the fumeroles and aspirated a measured quantity of the issuing vapor. The gases were made to pass through a glass cylinder containing cotton wool to arrest the chloride of ammonium which escaped condensation in the glass tube leading from the fumerole, I found one cubic foot of the vapor contained 7·5 grains of NH_4Cl, and the gases in the aspirator consisted, to a large extent, of carbonic acid and steam mixed with atmospheric nitrogen. There was no sulphurous acid, sulphuretted hydrogen, hydrocarbons, nor bisulphide of carbon present, nor could I detect any cyanogen, although in my laboratory experiments I sometimes got cyanogen compounds formed along with the ammonium salt.

On digging into the heap after it was extinguished, I found an abundance of sodium sulphate, but scarcely any sodium chloride. It was clear, therefore, that the common salt had been changed into Glauber salt.

I was led to conclude that the reaction which takes place may be enunciated as follows: When coal or other organic matter containing nitrogen is burned with a limited supply of air in presence of steam, sulphurous acid, and common salt, the whole of the organic or combined nitrogen is converted into chloride of ammonium, and it may be formulated thus:

$$2\,NaCl + H_2SO_3 + 3\,H_2O + C + 2N = 2\,NH_4Cl + Na_2SO_4 + CO_2.$$

I beg leave to claim that this formula present an explanation for the occurrence of chloride of ammonium about the mouths of coal mines which have caught fire. For instance, we read in Dumas' Chemistry (French edition, 1828), vol. I., page 617, as follows:—A remarkable phenomenon is presented in a burning mine (coal mine) about three-quarters of a mile from from Saint-Etienne; this is the production of a pretty large quantity of chloride of ammonium. The distillation of coals always gives ammonia, therefore its presence is not difficult to percieve of in parallel case. It is not the same with hydrochloric acid, because we have seen that M. Karsten has searched in vain for that acid in the different varieties of coals. It may perhaps be presumed, nevertheless, that the ammonia has been able to borrow the acid from the earthy chlorides which the waters that ooze through the rock-strata of that locality always contain. Be that as it may, however (Dumas goes on to say), the fumeroles established by the fire continally emit vapor of chloride of ammonium, besides the ordinary products of the combustion of coal. This salt is condensed on the bodies lying in the neighborhood as a crystalline deposit which is spoiled and dissolved by rain in wet weather (and he continues to say), It would not be impossible to obtain a profit from this product: it would be sufficient to place a covering or shed of boards over the fumeroles; the deposited salt on the walls could be gathered from time to time."

As we read still further back in the 1820 edition of Jameson's Mineralogy, 3rd vol., 13th page, that "sal-ammoniac occurs in the vicinity of burning beds of coal both in Scotland and England."

Of course it is well known that coals always contain sulphur, less or more; and also that the waters of collieries frequently contain a notable and sometimes a considerable quantity of chloride of sodium. A fire taking place in a coal mine under these conditions would certainly produce sal ammoniac if the reaction I have explained is correct.

I may say that laboratory experiments have been made on coal, coal cinders, shales, sewage sludge cake, sea weed, and a number of other things, and in every case the nitrogen of these bodies has come off combined as NH_4Cl.

The method employed was this: The nitrogenous substance was made up into a little brick with clay free from nitrogen, adding a little salt and ground iron pyrites. This was burned in a porcelain tube heated by a bunsen burner, passing at the same time a current of air and steam over the substance, the current was drawn through an ordinary bulbed condenser.

The following are some of the results obtained in these trials with coals:

	NH_4Cl per ton. Lbs.
Black's Slamanan coal	129·6
Clyde Company's Ell coal	101·2
Clyde Company's Jewel coal	138·8
Coal cinders (coke)	96·8

EXPERIMENTS WITH SPENT SHALE.

At an early stage in my experiments it was suggested that experiments on the spent shale from mineral oil works might lead to a useful result; arrangements were therefore made for a trial on a small tentative scale at the Broxburn Oil Works on one of Mr. Henderson's retorts. Before beginning the experiment I distinctly explained that the most satisfactory course would be to drench the spent shale while still hot in water containing a little common salt, then tip it into a chamber kiln or heap, rekindle it and allow it to burn in an atmosphere charged with sulphurous acid and steam, but it was thought by those at whose wish the experiment was made that the trouble of quenching and re-lighting the shale would be too great as a practical operation, and that it would be better to try to treat the charge in the combustion chamber beneath the retort. Steam was accordingly led under the fire-bars of the retort, and when the red-hot charge was being dropped out of the retort into the chamber beneath a quantity of common salt was thrown in amongst it. The result was an absolute failure. Due forethought would indeed have shown it to be not worth trying, for the shale when discharged from the retort is still giving off volatile matters and continue to do so during the whole time it is in the combustion chamber. It is therefore impossible that the salt which is evaporized by the heat could, along with steam, penetrate to the interior of the masses of shale and react upon the nitrogen.

A subsequent experiment made with spent shale from the same works which had been properly quenched in salt water yielded, in a small kiln built in Glasgow, a very satisfactory return of chloride of ammonium., and I believe it could be made to pay in that way.

I may mention that the spent shale samples when analyzed by this method yielded from 40 to 42 lbs. chloride of ammonium per ton.

Experiments were made in the furnaces of steam boilers with varying results, but all of them showing an important yield of chloride of ammonium.

The coal to begin was wetted with strong brine, and about 5 per cent. of coal "brasses" or iron pyrites mixed through it so as to yield sulphurous acid, then steam was led under the fire bars and the smoke drawn by a fan through a condenser.

In one experiment the consumption of about five cwts. of coal gave 12 lbs. of chloride of ammonium, or about 48 lbs. NH_4Cl per ton; but as considerable part of the ammonium salt condensed in the tubes and flues, 12 lbs. does not represent the whole quantity which was formed.

In another trial of the same kind some five tons of coal were burned, but only a part of the smoke therefrom was washed. The water contained at the end of the experiment 72 lbs. of NH_4Cl, but the flue tubes were thickly coated with soot, which, when tested, contained in several samples from 27 to 35 per cent of NH_4Cl. In fact the soot had quite a crisp feel and granular appearance, owing to the amount of sal ammoniac it contained.

These experiments with coal under a steam boiler were made partly under the same disadvantage as the spent shale in the Broxburn combustion chamber, and the salt and sulphurous acid could not get properly at the nitrogen.

The next experiment was with town ashes, and the results obtained from these were perfectly satisfactory, so far as yield was concerned, but great difficulty was experienced in getting the stuff to burn.

One ton of the wet ashes yielded some 80 lbs. of chloride of ammonium, but there was a certain amount of old leather shoes and stuff of that kind which, no doubt, would help to make up the quantity.

A laboratory experiment with sewage-sludge cake (moist) gave 44·8 lbs. NH_4Cl per ton.

The question will, no doubt, be put, is this a process of any industrial utility? My reply is that at present it is not yet brought to a manufacturing stage, but I believe the time is not far distant when it will become one of the most important sources of ammonia; presenting, as it does, that substance in the best form for the manufacture of liquid and carbonate of ammouia.

The question of amount of steam required has been a difficulty where the obtainment of free ammonia is attempted from fuel containing nitrogen, but in this case the chloride of ammonium condenses rapidly on the walls of the flues before the steam condenses. It is easy, therefore, to separate the ammonium salt in a dry state, and run the condenser water back to the burning heap to be used over again continuously.

*Read before the Society of Chemical Industry.

RECENT PATENTS.

394,663. MANUFACTURE OF CEMENT FROM LIME-MUD. Issued Dec. 18, 1888.

Claim.-1. The process of making cement from lime-mud, which consists in washing the same, treating it with carbonic acid till sulphureted hydrogen is no longer given off, then with sufficient alkaline silicate to decompose the alkaline-earth chlorides present, mix ng it with clay in the right proportions to form cement, drying, calcining, grinding, and exposing it to air, substantially as described.

394,693. DENTAL ANODYNE. Issued Dec. 18, 1888.

Claim.—The improved dental obtundent or anodyne hereinbefore described, composed of chloral, six grains; cocaine, five grains; arsenic, ten grains; creosote, twenty drops, and carbolic acid, five drops, substantially as specified.

394,841. MANUFACTURE OF COLORING-MATTER. Issued Dec. 18, 1888.

Claim.—As a new product, the yellow coloring matter herein described, which has the following qualities: it exists as a brown-yellow amorphous precipitate; in the dry state it represents a brown-red powder, which is insoluble in cold water, but more soluble in hot water, and easily, however, in boiling soap bath, with a yellow color; by the addition of alkali to the aqueous solution the yellow color turns red-brown; by mineral acid the color disappears and a precipitate forms; in concentrated sulphuric acid the coloring-matter dissolves with a violet color; unmordanted cotton is dyed yellow-red, (in a boiling soap bath,) and is conspicuous for producing shades fast to scouring and sunlight, substantially as described.

394,568. PAINT COMPOUND. Issued Dec. 18, 1888.

Claim.—A paint consisting of coal-tar, gasoline, asphaltum, varnish, litharge, mineral-brown, hydraulic lime, glue, and water, compounded together substantially as and in the proportion hereinbefore set forth.

394,612. ART OF DECORATING GASSWARE. Issued Dec. 18, 1888.

Claim.—An improvement in the art of decorating glassware, which consists in blocking out the groundwork of a pattern by a sand-blast and finishing said pattern by an engraving wheel, substantialy as and for the purpose described.

394,660. SOAP MANUFACTURE. Issued Dec. 18, 1888.

Claim.—1. In the manufacture of soap, the method described of combining palm nut oil or analogous fat difficult of saponification with strong lye to constitute soap and subsequently adding lye to curd it, and then adding linseed oil or analogous oil which is easily saponified, and boiling until the soap again closes, as herein specified.

2. In the manufacture of soap, the method described of combining palm nut oil or analogous fat difficult of saponification with strong lye to constitute soap and subsequently adding lye to curd it, then adding linseed oil or analogous oil which is easily saponified, and boiling until the soap again closes, then adding further lye until the soap again curds, then adding tallow or other easily saponifiable fat, and a third time inducing the closing of the soap, as herein specified.

3. In the manufacture of soap, the method described of combining palm nut oil or analogous fat difficult of saponification with strong lye to constitute soap and subsequently adding lye to curd it, then adding linseed oil or analogous oil which is easily saponified and again inducing the closing of the soap, then adding further lye until the soap again curds, then adding tallow or other easily saponifiable fat, and a third time inducing the soap to close, then adding and decanting, then adding lye and again decanting, and subsequently boiling until the mass again closes, substantially as herein specified.

4. The manufacture of a neutral or nearly neutral soap with a large proportion of palm nut oil or analogous fat difficult of saponification by first saponifying the same with an excess of alkali, then twice curding and closing the soap by successive additions first of lye to curd and then of a proper quantity of an easily saponifiable fat to close, then curding with salt, then decanting and removing such watery matter as is readily separable, then boiling with an excess of lye, and again decanting and removing the watery matter, after which the soap is closed by boiling with silicate of soda, and may be colored, cooled, and cut for use, all substantially as herein pecified.

DYE MARKET

Note—*Our prices are for large lots except when otherwise specified, and buyers of small quantities must expec to pay an advance on these figures.*

The prices current will be found on page 50.

TUESDAY EVENING, Dec. 25, 1888.

As is usually customary at this season of the year, there has been but a limited demand for any of the articles in the list, and as a consequence the general market for dyes and dyestuffs must be written quiet and featureless. Buyers' wants have been small and only for sufficient quantities to carry them over the current year' No important changes can be noted in quotations.

Albumen—Domestic blood is held firm on spot, with a very fair demand existing, and stocks in limited supply only; in fact, they are merely nominal. Prices are ruling at 17@19c. Foreign blood is in light demand at the moment, and the market is reported quiet by dealers. Quotations are nominal and range from 16@22½c, as to quality. Should any inquiry spring up, however, the asking rates would in all probability be advanced. Egg is rather quiet and has ruled at unchanged prices, namely, 72@75c.

Aniline Colors—A fair average business has been consummated since we last wrote, but the trading has been in jobbing lots, and there continues an absence of important transactions. The market is ruling steady at unchanged figures.

Alizarine has continued firm in tone, but owing to the fact that little trading has been accomplished, there has been no incentive to advance prices. It is anticipated, however, that quotations will show an improvement, immediately after the new year has made its appearance. One feature which has also deterred dealers from advancing rates, has been the fact that the competition has been exceedingly keen, and in view of this circumstance, no one has cared to take the initiative in the matter of advancing prices. The asking figures continue at 18½@20c, as to quality, etc.

Bichromate of Potash—The week has been exceedingly quiet in this market, and small parcels for actual consumption have sold exclusively. No change in quotations can be noted, and they continue at 11½c on orders of five casks, while a slight advance over this figure is asked where a smaller quantity is desired. Bichromate of soda has continued quiet and featureless at former rates, namely, 9½c for orders of five casks or over.

Cochineal — A hand-to-mouth business has been accomplished since we last wrote, stocks being almost neglected. Quotations are ruling nominal at 30c for Teneriffe silver, 29@30c for black and 33c for gray black. These figures, however, could be shaded on firm offer.

Cutch—We get sales of 300 bales Diamond S. M. on spot at 5⅝@5¾c, and 250 bales to arrive on the Exporter, which is now due, at 5¼c. There has been little trading beyond the above, and the market has ruled stationary. We are informed there are orders out at Calcutta for supplies at 5c, for future shipments, but the same have not, as yet, been accepted. There are reported sales of 1,000 bales RR at 5c; this, it is said, closes out a lot which has been offering in the market for some little time.

Divi Divi—The market has been rather quiet, and beyond the sale of a lot of 100 bags prime Curacoa at $52 50 we are unable to report any business. We are informed that the same lot is now held at $55. Maracaibo is selling at $45@50.

Dyewoods—No material change has taken place in the position of the market for stickwood. There have been limited arrivals, while a few transactions are reported. We get a sale of a cargo of Jeremie wood from dock at $30, the same having just arrived. It is reported that the cargo of Port de Paix, per the "Lizzie May," which recently arrived, has been sold at $37, but the price is questioned. A cargo of Monte Cristo has been received, but as far as can be learned the same has not yet been disposed of. It would probably bring $27. Considerable interest has been attracted to the extract market during the past week, owing to the fact, we are told, that some peculiar trading has been indulged in, in the shape of a sale of 500 barrels 42° extract at 4¼c, prompt cash on the receipt of goods, the same to be delivered at once. Additional interest has been drawn to the transaction by the fact that it was made by a member of the combination. Outside of the above the trading has averaged fair, though spasmodic. Rumor has it, that the combination has ceased to exist, but nothing definite is known in regard to this. At any rate, it would appear that prices have been quoted "away down," and ruling market prices have been totally disregarded. Following are the nominal quotations: 6¾c for No. 1, 51° extract, with No. 2 at 6¾c and No. 3 at 5½c; 42° No. 1 at 5⅞c; No. 2 at 5¼c and No. 3 at 4¾c. Imported and the highest grade domestic 51° continue to rule at 10c, fustic at 7¼@9¼c for 51° according to quality. No. 1 solid is now held at 10@10½c; No. 2 at 9c and No 3 at 7¾c. Sumac is quotable at 3½@3¾c for domestic liquid 51°; for imported the prices are very much unsettled, and in buyers' favor. Hypernic at 12¾@14c or 51° and 20@24c for solid.

Gambier—There have been two arrivals since our last, namely, the "Macca Beo," with 3,764 bls, and the "Tobique," with 4,806 bls; out of the total, there have been sales of 3,500 bales for consumption. Sales of 500 bales on spot are reported in three lots, at 5⅝@5¾c. These figures represent the market, and are also quoted for parcels to arrive, with the market exceedingly steady. There is now a gap of two months before the next vessel is due.

Indigo has ruled quiet and unchanged, and there has been a total absence of important transactions. News from abroad is uninteresting. Quotation are as follows: Guatemalas at 70@85c and Bengals at 80@85c for low grades, $1 10@1 20 for medium and $1 25@1 40 for high grades.

Nutgalls—We note a sale of 100 cases Chinas at private terms. The lot is due about January 10. The market is steady, with prices firmly held. Small sales on spot are noted at 16@17c. Aleppos have not altered, and the market is rather quiet, with quotations ruling at 15½@16c.

Prussiate of Potash has continued in moderate demand for both kinds, with no features noticeable, worthy of mention, while quotations are unaltered at 19c for yellow and 42@45c for red.

Starch—Prices for all kinds are unchanged from a week ago. The proceedings of the meeting of the manufacturers of corn have not yet been divulged. It is said that matters of interest were brought up, but that nothing was fully developed, and in consequence another meeting will be held in the near future. The stocks of this kind are comparatively low on spot, with the market firm at 2¾@3c. Potato is selling at 4¼@4½c, while wheat continues steady at 5¾@6¼c for best, 4½@4¾c for seconds, and 3c for thirds.

Sumac—Small sales have been consummated at $65 for spot supplies, but no important trading can be noted. The market is firm in tone. Virginia has ruled quiet at our former quotations of $45@50.

Tin Crystals have been in light demand, at old figures, with the market bare of interesting features. Quotations are ruling at 16½@20c.

Coloring Matters and Dyes.

THE EURHODINES. O. N. WITT, BERLIN.

Eurhodides are those dyestuffs which are derived from azines by substituting an atom of hydrogen by an amido-group, safranines are those compoudds which contain two amido-groups and are azonium bases. The author proposes to apply the name of "Eurhodines" to all amido derivatives of the azine class, and to term safranines amide derivatives of the azonium bases.

It is a remarkable fact that both these compounds have a close connection with the indamines; in many instances the indamines are obtained as intermediate products. The following experiments have been undertaken to find out whether the formation of this intermediate indamine is always necessary, or whether the azines and azonium bases can be formed directly. To prepare an indamine, a compound has to be used in which the paraposition to the amido-group is free, whilst azines aud azonium bases require only a free ortho-position to the amido-group. The metaxylylene diamine, prepared by Fittitg, Ahrens, and Mattheides—

$C_6H_2(CH_3)_2(NH_2)_2$ [CH_3:CH_3:NH_2:NH_2=1:3:4:5] could not yield an indamine, but it was quite feasible, that by the action of nitrosodimethylaniline, for instance, on it, a eurhodine might be formed. The result of experiment has, however, decided against this hypothesis. If one molecule of this metaxylylene diamine be treated with oue molecule of sodium acetate and one molecule of nitrosodimethylaniline a violent reaction takes place, but no eurhodine was formed. No better result was obtained when di-imidochloroquinone was caused to act upon the solution of the diamine acetate.

Nitrous acid does not produce in the solution of this diamine a brown coloration, neither does diazobenzene sulphonic acid when added to it form a body of the properties of chrysoidine. All these reactions, characteristic for meta diamines, do not take place because the paraposition is already occupied.

But this metaxylylene niamine can be diazotised and forms dyeftuffs when combined with phenols or amines. The combination with metatoluylene diamine forms a brown dyestuff, with α_1, α_3, alpha-naphthol sulphonic acid a red, and with Bronner's beta-napthylamine sulphonic acid a reddish brown coloring matter.—A. L.

Improvements in the Manufacture of Coloring Matters. H. H. Lake, London.

These are basic yellow coloring matters which it is propcsed to name "Benzoflavines." They are derivatives of triphenylmethane produced by condensing one molecule of benzaldehyde with one molecule of a meta-diamine, and then witn a molecule of the hydrochloride or sulphate of the same base. The new tetramines on treatment with substance capable of separating ammonia give hydrodiamidophenylacridines, which can be oxidized to diamidophenylacridines or benzoflavines. The course of the reactions is given in the following stages, illustrating the production of the coloring-matter from benzaldehyde and metatoluylene diamine:—1. Equal weights of the diamine and aldehyde are made into a paste with water; the mixture becomes warm and the product (monobenzylidene-metatoluienediamine) separates as a viscid resin which solidifies on standing. (2.) 75 lbs. of the dried and powdered product from the last operation are heated with 85 lbs. of the sulphate of the meta diamine, in 500 lbs. of water, to a temperature of 60°—70°C. till the whole has dissolved. The leuco-base (tetramido-ditolylphenylmethane) is precipitated by alkali. These examples are given showing tne leuco-base can be obtained in one operation without first isolating the benzylidine product,—(*a*) 48 lbs. of the diamine sulphate are mixed with 20 lbs. of soda lye (40 per cent.) and 30 lbs. of water. To the paste 10·6 lbs. of benzaldehyde, dissolved in 24 lbs. of alcohol of 95° Tw., are added, and the mixture kept at 60° till everything has dissolved. The leuco-base is separated as before. (*b.*) 61 lbs. of the diamine and 98 lbs. of the hydrochloride are dissolved in 200 lbs. of alcohol and 53 lbs. benzaldehyde poured in. The mixture is is kept at 70°—80°C. until the precipitation of the hydrochloride of the leuco-base is complete. The crystalline salt, when pure, has the formula $C_{21}H_{24}N_4$, 2 HCl. (*c*) A mixture of 100 lbs. of the sulphate of the diamine and 200 lbs. of 50 per cent. alcohol is heated with 25 lbs. of benzaldedyde for several hours, in an apparatus provided with a condenser. The sulpho of the leuco-base gradually separates as a crystalline deposit. (3.) The next operation is the production of the hydro-base (hydrodiamido-dimethylphenylacridine) which is accomplished by heating the hydrochloride or sulphate of the leuco-base with hydrochloric, sulphuric, or other acid in an autoclave for several hours at 160°. The salt of the hydrobase separates out; the free base has the formula $C_{21}H_{21}N_3$. (4.) The hydro base is oxidized by atmospneric oxygen, but it is found better to use ferric chloride; the necessary quantity of the latter is added to the ice-cold solution of the hydrochloride of the base, when the coloring matter is immediately precipitated. If zinc chloride is present a double zinco chloride is formed. Metaphenylenediamine can be used in the foregoing operations, and substituted benzaldehydes instead of benzaldehyde. Thus nitrobenzaldehyde gives nitrotetramido bases from which nitrobenzoflavines and amidobenzoflavines can be obtained. The nitrotetramines can be also obtained by the direct nitrification of the triphenylmethane derivative by means of nitric and sulphuric acids. In the specification the details of the process are given for preparing such a nitrotetramine, reducing to the corresponding amido compound, converting the latter into the acridine base and then by oxidation into para-amidobenzoflavin. These coloring matters dye mordanted cotton of a yellow color; they dissolve with difficulty in cold water, more readily in hot water. Dilute acids precipitate them from their aqueous solution. They dissolve in strong sulphuric acid with a yellow color, the solution having a greenish fluorescence. The alcoholic solutions have also a strong greenish yellow fluorescence, which is destroyed by dilute acids. The free bases are colorless and insoluble in water.—R. M.

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See British Medical Journal, Oct. 20th, 1888, page 881.
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